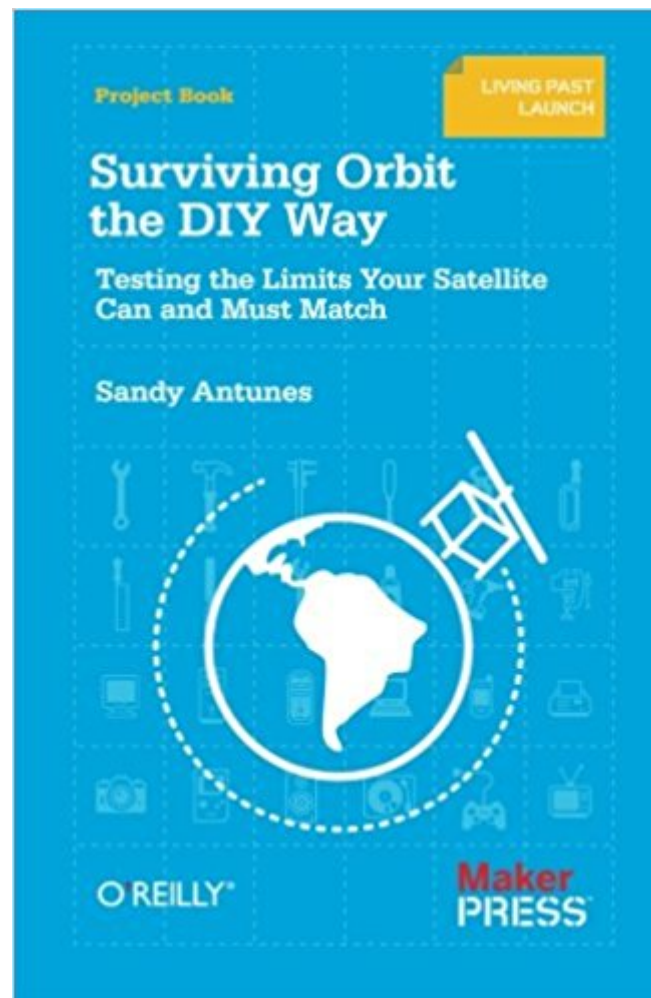




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Surviving Orbit The DIY Way: Testing The Limits Your Satellite Can And Must Match



Synopsis

Is your picosatellite ready for launch? Can it withstand rocket thrusts and the vacuum of space? This do-it-yourself guide helps you conduct a series of hands-on tests designed to check your satellite's readiness. Learn precisely what the craft and its electronic components must endure if they're to function properly in Low Earth Orbit. The perfect follow-up to *DIY Satellite Platforms* (our primer for designing and building a picosatellite), this book also provides an overview of what space is like and how orbits work, enabling you to set up the launch and orbit support you'll need. Go deep into the numbers that describe conditions your satellite will face. Learn how to mitigate the risks of radiation in the ionosphere. Pick up enough formal systems engineering to understand what the tests are all about. Build a thermal vacuum chamber for mimicking environment of space. Simulate the rocket launch by building and running a vibration shake test. Use a homebuilt centrifuge to conduct high G-force tests. Get guidelines on scheduling tests and choosing an appropriate lab or clean room.

Book Information

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Customer Reviews

Alexander "Sandy" Antunes (born 1967 in Baltimore, Maryland) is a Maryland-area astronomer, author, and role playing game designer. He graduated from Boston University in 1989 with a dual major in astronomy and physics, received a Masters in astronomy from Penn State in 1992, and received his PhD in computational astrophysics from George Mason University in 2005. He was the Maryland Science Center "Science Person of the Month" for May 2007.

This is a small book, but still has a lot of useful information. It's written in easy-to-understand language. It really pushes the crude end of doing things with cubesats. One centrifuge suggestion is literally putting your cubesat in a sling and whirling it around your head. Another one uses a drill to turn a counterbalanced stick to get a few g's out at the end. It's clever to use the accelerometers in a cell phone to know the acceleration in your centrifuge. You can make your own thermal vacuum chamber with a modified pressure cooker and a heat lamp. If you are on a very tight budget, then this is good for you.

Good read and intro to small satellite testing. Just enough technical detail to get you going in the right direction and not so much that you'll feel like you're drowning. There are very pragmatic suggestions for everything you might encounter.

That says it all. How the would our hero a spacecraft survive up there long enough to present meaningful data and if need be act upon it.

A little short on details but otherwise OK! would like to see more of the details on how to's in the next edition!

I am not building a cube-sat in my garage, but if I were, I think this book would have at least given me a clue as what I would have to do to give my cube-sat a decent chance of survival in the low orbit environment. I am interested in building instrument packages for civilian drones, and my thinking is that a package that could surviving low orbit could easily survive use in the atmosphere. Lots of food for thought, and easily worth the price.

Good

Good

Great book and fun read. The book really helps you understand what it takes to make a pico satellite space worthy. that being said the book really focus's on that aspect as titled and I'd have liked to see more detail about building micro satellites so this ends up being a secondary purchase to other books on topic. That being said the book is well titled and covers the topic well as least as

far as my software engineering background with some robotics mixed in can tell.

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