

Your Amazing
Itty Bitty™

**Explore Space
Now! Book**

*15 Simple Ways to Personally and Directly
Participate in Space Exploration
RIGHT NOW!*

Pam Hoffman

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This book is dedicated to you! Without people, nothing happens yet I see group after group working on technology to get going in space exploration.

Who will live and work there? Who will love and die there? For me, it's all about you! Technology will never be irrationally attached to a teddy bear or yearn to visit another world just to see what's there.

Your car can't write poetry! You can though. You are a child of the universe. Without you, nothing else can happen. All the tech in the world is just dead matter without someone at the helm. And you are a creature of action.

It's All About Action!

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Introduction

In this Itty Bitty Book you will find 15 simple ways that you can get directly involved with space exploration, science and astronomy. It's not just a rich kid's game or the realm of governments anymore. If you have a ping pong ball, you can play too, and not just ping pong!

Action 1

Visit APOD for Eye Candy

One of the simplest ways to participate in space exploration & astronomy is to visit a website called Astronomy Picture of the Day, better known as APOD.

1. You'll see an amazing picture of some kind, typically provided by NASA though others contribute also.
2. Below the image is a brief description of what you are looking at and some of the facts pertaining to it. It may be historical, scientific or lore.
3. Within the text will probably be links to other sites and pictures where you can learn more about the image or related information.
4. This is a great site when you need a quick dose of space, to take a break from your routine or for inspiration. Few things are more breathtaking than images of the cosmos!

This is a Great Activity for Anyone!

- There are some marvelous pictures on APOD of all sorts of space views including launches, starscapes from Earth, HST (Hubble Space Telescope), of eclipses and interesting atmospheric phenomenon
- Access APOD by doing a search or by visiting <http://apod.nasa.gov/apod/astropix.html>
- This activity is kid and family friendly. You get a thrill from the safety of your own home. All you need is access to the internet!
- Additional activity: Request the disc! “The APOD pages are collected annually on a CD-ROM, which is distributed free of charge to educators and the general public.” ~NASA
- Advanced activity: Do you have a picture that would make a good addition to the APOD site? Visit the Itty Bitty Book blog to learn how!

Action 2

Track Satellites Drifting by Overhead

Did you know that you can look up and see orbiting satellites in the night sky? I mean the ones we launched from Earth! We've been sending objects into space since the Soviet Union launched Sputnik in October of 1957.

1. Look right after sunset or right before sunrise because the Sun reflects off of the satellite and it's dark enough overhead to see it.
2. The object may be bright or dim and it seems to glide along. Nothing moves quite like a satellite in orbit!
3. Looking helps you find them, a good tool helps even more!
4. If it blinks, it's an airplane.
5. If it's bright and sits still, it's probably a planet.

The International Space Station is a Great Target!

- The best tool to find a satellite in the sky which we launched from Earth is Heaven's Above. ISS (International Space Station) and many others are listed on their website. A quick search will get you there.
- A great way to find the ISS *only* is to subscribe to *Spot the Station*, a NASA app that you can use with your iThing or your computer. It alerts you to a pass over the location of your choice.
- You can see ISS and other satellites from almost anywhere on Earth!
- REMEMBER – these are *predictions*! You don't always get to see the satellite you're looking for. It's very fun to look even so.
- Additional activity: Find other ways to use the *Heaven's Above* website. There are many great tools and diagrams there.
- Advanced activity: Look into ham radio antennas used to hear satellites and if you are really ambitious, build one! Feel free to start here:
<http://spacer.pamhoffman.com/hamsats-part-3/#.Vdz0Ln2Dp-Q>

Action 3

Stargazing

Until recently, looking up and seeing the stars in the night sky was just part of our daily lives. More wasted and less secure lighting has consumed our cities yet the stars still shine on and all you need to do, even now, is to look up.

1. On any given (clear) night, you can still see the brightest stars in the night sky.
2. Sometimes you can see planets.
3. More often you can spot the Moon. It's a pretty easy target though.
4. There is about one meteor shower a month though the Perseids in August and the Leonids in November are considered the best by some. You'll probably hear about them most often.
5. On rare occasions a comet graces your night sky. Seeing one of them typically requires a dark site and sometimes binoculars or a telescope.

All You Gotta Do is *Look Up!*

- Your best tool is your vision. Take good care of your eyes; never look directly at the Sun! Even during an eclipse of the sun, use filters made for that, welders glass or an indirect method like a pinhole projector.
- There are a couple of tools which will help you find stars and other objects in the night sky, see Action 11 for more information about that.
- Binoculars expand the number of objects you can see in the night sky and they are pretty easy to come by.
- Additional activity: Tune in to the IDA, a.k.a. the International Dark Sky Association. You'll learn about lighting and security and how to have a night sky *and* a more secure nighttime.
- Advanced activity: Every March in many locations in the world, amateur astronomers are out at night in search of the most "M" objects they can find. Find out who Messier was and why this tradition lives on! You may want to participate in that event once you do.

Action 15

Launch a PongSat for Free!

“A PongSat is an experiment that fits inside of a ping pong ball” ~JP

And there it is! When you are done with your ping pong ball, turn it into a PongSat! Would you like a ‘maker’ version next? With over 120 activities on the ES blog, we could do that, if you want it. Here’s an idea how that might look...

You've finished. Before you go...

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Please star rate this book on Amazon.

Reviews are solid gold to writers. Please take a few minutes to give us some itty bitty feedback on this book.

ABOUT THE AUTHOR

Pam Hoffman is an *Everyday Spacer*. Most of the things she wrote about in this book, she has done herself and you can too!

Every day, in dozens of different ways, it's getting easier and easier to participate directly and personally in space exploration, science and astronomy.

It's getting easier on the pocketbook too, this Itty Bitty Book is a great example of that.

If you would like to know more and get involved in these things directly, please visit us at *EverydaySpacer.com* and browse around a bit. We have something for almost everyone wherever you are, whatever you have time for and for pretty much any budget.

Other Itty Bitty Books