

About the Author

Anthony S Harding, Jr.

2023-12-26

Since I have always found it entertaining (if not useful) to know a little about the authors of what I am reading, it seems a short bio may be appreciated. If this doesn't matter to you, then feel free to skip it.

I grew up in rural northeastern Indiana. My interest in astronomy was sparked one evening when I was around 7 or 8 years old, as my family and I were returning home after dark. On the walk from the car to the back door, a stray flash of light caught my eye. Did that come from the sky? What was that?!? I stopped and asked my parents. "Oh, that's just a meteor," they explained. "A meteor?" I inquired. "What are those?" The reply came, "Just piece of dust falling to earth from space."

In my short life thus far, it had never occurred to me that such a thing was even possible! I stayed outside watching the meteor shower until forced to come in. The next day at school, I hit the library and started digging through books on astronomy. I just couldn't believe that ALL THIS STUFF was out there, and no one had ever even mentioned it to me! From that point on, I practically inhaled every book on astronomy I could find. Through my high school years, this passion consumed me.

Circumstances at the time prevented me from pursuing a formal higher education, but I did later manage to attend college as a physics major. Unfortunately, I would not have the resources to continue and obtain a degree. But, this did not prevent me from maintaining a deep interest in the subject.

Relatively recently, I have been able to (finally!) obtain some modestly respectable gear and begin sweeping the sky in detail—something my earlier conditions would not permit. Over the last six or seven years or so I have been an avid and enthusiastic visual observer. Though I knew that visual observing was where my main interest lay, I even obtained a couple low-cost astronomy cameras and began experimenting with lunar and planetary astrophotography. The results were mediocre most of the time, but it was a learning experience that proved a nice distraction from the usual visual pursuits from time to time.

As I began reading more advanced material, I found myself wanting to delve deeper. But what could I do? So many things had become available at reasonable prices since those boyhood days, but even so a lot of it was beyond my budget. I then started checking into doing some spectroscopy. Nothing fancy, just basic stuff. Stellar evolution had always been a particular interest of mine, and so spectroscopy attracted my attention. I purchased a copy of RSpec and the SA100 grating. I captured a few spectra with a color camera, and that was really neat. To be able to see dark bands in the color spectrum was amazing! This had always seemed like strictly professional-level stuff, not something a mere amateur like me could do. The exercise was invigorating.

Initially enthused, I began educating myself on the practice, and collected books dedicated to the subject. Most of these books, however, were written for deep-sky astrophotographers, or geared for those with extremely expensive equipment (which I will never have). Those complicated techniques were simply beyond my experience. This was disheartening, so the spectroscopy went by the wayside.

Fortunately, the "itch" crept up on me again later, and I decided to give it another go. This second wind was accompanied by a drive to see this work. I wanted to actually **see** what separated one star from another! It took time—and a lot of help from Tom Field and Robin Leadbeater. Turned out, my color camera was apparently a big issue; it just wasn't responding the way that was expected. Unwilling to give up on this, I found funds in my budget for a modest monochrome camera, and tried again. That single decision caused the dam to burst wide open. All the issues that I had previously encountered vanished. I was able to recapture spectra for the stars, process them all, and compare their features. Woohoo!

I began systematically collecting and processing data, which has been arranged in the reports you will find here. With the paucity of material out there, it seemed like a good place to start would be some sort of general survey of stars in each constellation. But which stars to use? There are SO MANY stars in each constellation that it would take a lifetime to get them all! I also knew I would need lots of practice to get to a point where I was confident in (or at least comfortable with) the results. Well, how about the stars that define the constellation lines? The survey wouldn't be "complete," in any greater sense, but it seemed like a good start. Plus, I reasoned that it should provide a wide variety of different classes of stars for comparison.

And so my "Spectroscopy Project" began. I sent the first of my reports to Tom Fields, who unexpectedly stoked my ego by asking that I post them on his Groups.io page for others to see. Since then, Tom has graciously offered to also host these reports for others to examine. I hope you will find them at least somewhat informative and useful.

This project is an ongoing one. As data is collected, analyzed, and collated, it will be added to the collection. As time has passed, I have found that my proficiency seems to be improving. Can I guarantee that there are no errors in these reports? **Absolutely not.** They are the works of an amateur—me. And I have had to collect, process, and analyze them on my own (using some invaluable reference material, of course). And the equipment I use is certainly not top-tier. But, I hope that the information may serve as a kind of reference for others to compare and contrast to their own work. And, since this is an ongoing learning process, I hope to continue refining my own work based on the feedback you will hopefully provide.

Respectfully,
Anthony S. Harding Jr.
anthonyspectro@gmail.com