

"The world around us is indeed beautiful and mysterious if we only can learn how to observe its many wonders. All the sights in the sky are ours free for seeing. To let them slip by and not notice is to miss part of life." Rainbows Mirages and Sun Dogs: The Sky as a Source of Wonder, Roy A. Gallant, page 88.

Immersion is a popular term in video games and other Interactive entertainment where the person feels completely involved in the world or subject matter they are interested in. It is usually technically based, but often unnecessary technology is eschewed during the game or experience. For instance, if you go on an immersion holiday, cell phones are usually not allowed and only the basic needs are taken care of by technology. The idea is not always to ignore technology (you can't play a video game without it), but instead to minimize outside influences on your experience.



Amateur astronomy has grown more reliant on innovative systems and computer control than ever before. I've certainly given my opinion on that before and realize that it is the future. However, what can be a great aid to your experience can also get in the way. Constantly tweaking and setting up your equipment under dark skies can be frustrating for some. And for others, the idea of having long, philosophical discussions while the night wears on ("burning darkness") may be fun, but some of us just want to look at the sky. We try to enjoy what we are there to do and not think at all about anything other than the enormous wealth of beauty above us.

Of course, there are folks who enjoy the social and technical aspects. It's not that they should be ignored, that's just not the focus for many observers when there is a clear sky. You may find as part of your expanded immersion increased participation in public outreach, education, club activities and so on. These too can form enjoyable expansion in your hobby. And, in a way, even the most public event can be immersive if you allow interaction to be your prime focus for one astronomy night. Showing people beautiful objects in the sky, discussing them and motivating them to look for themselves with their own equipment - even just casual stargazing - can be incredible experience. Don't think the only immersive activity you can enjoy is standing alone in the middle of a dark field somewhere.

Stages of Immersion

This brings up the need to clarify the differences and similarity of "chronic" immersion (overall in your daily life) and that of "acute" immersion on a single night, star party or another event. The fact is that most people can immerse themselves in astronomy only on a few weekends a year. Besides the usual issues of weather, moonlight, other natu-

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ral causes, our social, work, and family lives also limit the time we can put into our hobbies. Later in life, after retirement or other increase in leisure time, it becomes possible to spend much more time on amateur work and branch out into new subjects or deeper into ones already enjoyed.

> "The greatest reward is not in seeing something unusual but in realizing that it is unusual. This serendipitous state cannot be achieved overnight. You must acquaint yourself with the everyday before you are in a position to notice the unusual. This takes time, patience, and a certain amount of commitment, though it's never a chore. In fact, that's part of the fun." Out of the Blue - A 24-hour Skywatchers Guide, John Naylor, page 4

The way to prepare and best enjoy short term "acute" immersion has been well documented by books discussing equipment, backup plans, observing lists, dark adaptation, etc. and I won't revisit that subject much here. One thing to bear in mind though is that when you are ready to put more time in, it would be better if you have already tried a few different types of observing, or objects, equipment, club or outreach activities, etc. just so you know what interests you. Doesn't mean you can't try something new in the "chronic" phase of your hobby, but you will be better prepared if you've tried a few different ways and objects. So, when there is more time to spend on astronomy, you will find there are plenty of activities to keep busy at, if you are willing to make some changes to your lifestyle.



Outreach / Educating Others / Citizen Science

"Education is not the filling of a pail, but the lighting of a fire." – W.B. Yeats

Not everyone can teach in a professional setting. However, with astronomy, we can often teach by sharing our experiences, mentoring others on techniques, and other training level education. There is also the very real and enduring value of public outreach. Young people, city bound folks, and others who are not able to enjoy the sky directly will always find joy in seeing Saturn for the first time in a scope, or the moons of Jupiter, etc.

Another activity to "lose" yourself in is citizen science. If you

commit to helping look for new asteroids, time occultations by the moon or asteroids, report the brightness of variable stars, or search for exoplanets, there is enough to do to fill anyone's free time. Even by including the passive activities on websites like Zooniverse, or processing raw images from Hubble or James Webb, citizen science can become a nice addition to your experiences. Often, these types of observations and reporting may include teams if you prefer. You may never meet other amateurs in person, but global team building may have many benefits. You may increase the depth of your astronomy involvement and learn about other people in other places and how they view the sky. Working alone or with many, adding to the wealth of human knowledge about the cosmos via citizen science means something. For me, it has been a most enjoyable addition, late in my lifelong hobby.

Searching for new asteroids or dangerous ones not only increases our safety but may lead to resources that can be mined here in our solar system. Studying variable stars led to the understanding of galaxy formation, thus the Big Bang, and the fundamentals of cosmology from there. Specific techniques from eclipsing variable star studies and asteroid occultations are used to search for exoplanets that may represent our best way of finding other life, if it exists.

Travel to Other Sites, Star Parties, and Hemispheres

"Dead giveaways for [amateur] astronomers on their way to a [star party] include...people carrying incongruously warm clothes for the environment, or anyone who looks suspiciously awake late at night." The Last Stargazers, Emily Levesque, page 56.

Whereas in our busy career and family building years we may not have time to travel, later we may heed the call of the other hemisphere or of famous events or dark sky sites. Astrotourism may include not just star parties, but also chasing eclipses, visiting observatories, or other historical or scientific points of interest. Conventions, equipment workshops, imaging courses, and other group settings allow us to meet kindred spirits and develop lifelong friendships with people who share our interests. Perhaps the most rewarding of all is going to the other hemisphere (e.g. southern if you are from the north) to view objects invisible to you at home.

Study Ancient Astronomy / Other Cultures

"We have seen how the Earth is only a speck in space; we now see that our lives, and indeed the whole of human history, are only a speck in time." The Stars in Their Courses, Sir James Jeans, page 91

Amateur astronomy may have begun as much as 30,000 years ago; there is evidence of drawings from that period that indicate knowledge of the sky. Spirituality also began to co-evolve with the ideas involved, and this may explain why these cultural developments occurred at similar stages in our development.

"The study of ancient astronomy is therefore not limited to the purely technical matter of how prehistoric observations were carried out the most interesting question is how the skywatchers connected their skills with both everyday needs and spiritual impulses by trying to reconstruct their sky visions we gain an insight into how people in the distant past regarded themselves as well as the natural surroundings in which they found themselves." Early Man and the Cosmos, Evan Hadingham, page 5.

Studying how astronomy began therefore helps us understand how man evolved as he did. Astronomy affected many parts of our culture, some of which we see traced in artifacts, others in myths and legends. Of course, the development of agriculture, the main achievement of this epoch, was made possible by clocking the seasons via astrological predictions based on calendar stones and other sources of timekeeping.

> "What caused primitive man to raise his eyes from the earth toward the sky above him? To maintain himself he had to fight for his existence incessantly against the hostile powers of nature. Science originated not from an abstract urge for the truth and knowledge. It is a part of living and is a spontaneous practice born of social needs." A History of Astronomy, A. Pannekoek, page 19.

Maps and exploration may have been adapted hand in hand from studying the stars to surveying the earth.

"Star maps were another technique developed by nations to aid travel. Australian Aborigine societies used patterns of stars to represent routes of travel on land for example each star in the constellation refers to a specific landmark on the ground while the pattern indicates directions." First Knowledges - Astronomy: Sky Country, edited by Margo Neale, page 98.

Enduring Legacy and Unique Personal Experience

"The brain is a physical system. Its activity is well described by physical law. But while states of the brain are the states of a physical system, experiences are the states of an immaterial system (call it the soul). States of the brain are observable by anyone with the right equipment. States of a soul are detectable only by its possessor. Science describes the public universe, but the soul is accessible only to its own subject. Experience will never be described by objective science." Consciousness - A User's Guide, Adam Zeman, page 307.

Immersion in amateur astronomy can be the hobbyist staying up late a few nights a year and buying a telescope. Or you can put in more, especially time and effort, and become much more deeply involved. If you have the time and drive to do so and can make the relationships and demands you have work with it, modifying your way of life to suit a deeper immersion in astronomy could prove to be very satisfying. You will enjoy the unique experience only you will ever have in the hobby, but can also make lasting contributions to human knowledge, your club and friends, and influence the next generation coming behind you.

