

# Looking Up

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On September 28th, 1980, Carl Sagan started his popular series, Cosmos, with his now very famous words.

“The cosmos is all that is or ever was or ever will be.”

37 years pass by and the phrase still has huge connotations in our lives. Astronomy isn't very popular or widespread in today's world. In fact, it hasn't ever been popular. The modern world often claims to know about astronomy while mistaking the subject for astrology – which is fake. And yet, we all still have a connection to astronomy. Whether we realize it or not, there's something deep within us that gives us a physical connection to the world above.

“Astronomy compels the soul to look upwards and and leads us from from this world to another.”

Literally.

When we look up at the night sky, we're looking beyond our world, we're looking at something Earth will never give us, we're looking for some meaning in that beauty above us. We're just a part of the grand scheme of the Universe and yet we're so attached to it. You and I may be next to nothing in terms of size as compared to celestial bodies, but our components are just the same:

“The nitrogen in our DNA, the calcium in our teeth, the iron in our blood, the carbon in our apple pies were made in the interiors of collapsing stars. We are made of starstuff.”

Infinity is an abstract concept. It's a range, a dimension rather than a value as we usually see it. But we spend our lives searching for a meaning to infinity, without ever realizing that the answer is right above our heads – lying in the beauty of the vast expanse we like to call the Universe. While **“The Universe is under no**

***obligation to make sense to you"***, it's your duty to try to understand what you can. The cosmos exist for you to look up at and be curious, ask questions and ponder. It's an infinite exhibition on display and the art at this exhibition is there forever.

In a country like Pakistan, where astronomy isn't really valued and not taught to children, the subject hasn't had much growth. We don't really value astronomy because we don't get paid for looking at the stars and it's not really a job. But that's our mindset as a whole and the efforts of a few is changing that. Our children don't understand the vastness of this subject – they're told to keep their heads down and keep their focus on education. Their curiosity is murdered. As they grow up, burdened with so many priorities and things to get done, what could have been for them is no more. They won't be looking up and questioning the world, they'll be looking up searching for some peace. In all that time everything has changed for them but one thing has remained constant: the night sky.

The night sky, littered with tiny, bright dots is symbolic of the endless opportunities for us in our lives and is a testament to the wonder of the worlds above us. There's a star for everyone out star. Or rather, stars\* for everyone out there and it's not something we should be missing. They're on display every night and there's no ticket required. From personal experience, getting out of the house and mentally making your way up to the Universe is relaxing. It's also very humbling when you realize you're a part of something so huge and so vast, the dimensions of which we might never be able to comprehend. That's where you see that there's beauty in mystery as well. The unknown demands questions from us but gives us no answers in return – that's up to us to search for. Some things you'll understand, whereas you can only identify many other things. When you look up, all those names you've never heard before or ever given any thought to, lie there, specks in an infinite sea of darkness. There rests Altair, then Deneb, Vega, Sirius, Betelgeuse and so on and so on till we run out of names to sort them and start assigning numbers instead.

Each dot up there is so far away from us that we might never get anywhere them, yet at the same time, so close to us we could almost reach out and grasp them in our palms. Then you realize every one of those dots is part of a system of the Universe and a fragment of infinity itself. Some things as small as grains of sand that can be something this big is truly something to marvel about.

That is the beauty of infinity, the beauty of the cosmos. One of the truly humbling experiences we have to constantly remind us that we exist and we can experience something calming, beautiful and mysterious at the same time. There is nothing up there that is short of breathtaking. Everything can inspire awe once you delve into some thought. There is so so much out there and we miss it. We need to change that.

You could spend your entire life counting everything up there and still not be done. You'll get outrun every time. There's just too much to take in.

At the same time, however, you would never believe that there are **more H<sub>2</sub>O molecules in just 10 drops of water than there are stars in the Universe.**

*(The photo above is of the Horsehead Nebula (also known as Barnard 33), located in the Orion Constellation, which is about 1500 light years away from us and has a radius of 3.5 light years. The red and pink that you can see is because of hydrogen gas. The credits for this beautiful image goes to T.A.Rector (NOAO/AURA/NSF) and the Hubble Heritage Team (STScI/AURA/NASA))*