

[intro music in]

[intro music out]

When you look up... What do you see?

[music in]

Do you see the constellation Aquarius?

What about Aries?

Or Gemini?

[pause]

What about stars in general?

How many can you see?

[pause]

Chances are after you sort out whether or not some of those stars are airplanes or not the amount stars you counted can probably fit on your fingers.

But for the average person that really isn't surprising, you've probably looked at the sky a billion times over and saw roughly the same amount of stars. Most people would say that you couldn't see very many stars because stars are so far away that you need a telescope to see them.

But that's not at all the case.

In fact what if I told you that if you were to drive out to say Steens Mountain Recreation Lands in southeastern Oregon. Where the nearest large City is some 140 miles away you would see an explosion of color in the sky with thousands of stars visible to the naked eye.

[pause]

So if we are able to see thousands of stars out in the middle of nowhere but only a few in a large city or suburb then what gives?

This is something that scientists refer to as light pollution.

It's when things are so bright that other bright objects can't be seen. For example if you were to turn on a small flashlight and put it right next to a turned on car headlight and stand back 50 feet you wouldn't be able to see the light of the flashlight because of how bright the headlight is.

[pause]

But this is an actual problem facing the scientific community as the brightness of cities makes it more and more difficult to look at far away stars for research. In fact even being far away from large cities isn't good enough because sensitive telescopes and equipment still pick up on the brightness of cities. Scientists are constructing observatories farther and farther away from towns and cities in order to just be able to see the stars at night and even then the constant growth and creep of cities makes it only a temporary solution.

But the problem runs deeper than just the scientific community.

Wildlife and Nature are affected by this at animals that have been used to a night and day cycle since the beginning of Earth now all of a sudden have to struggle to survive with a constant bright light source dramatically changing their sleep patterns and overall reaction to the environment. Not to mention that birds and insects are lured toward cities as a source of light and

end up dying as it is a very harsh and unsuitable environment for them. Sea turtles are another species that's heavily impacted by light pollution as they can mistake cities for the moon and instead of going towards the ocean to swim away they end up walking towards the cities and dying.

This amount of light pollution also has health effects on us with increased sleep disorders, obesity, cancer, and depression. And even with all that the wasted light that is sent up towards the sky all in all costs around 3 Billion dollars every year.

So a lot of research has been done on the exact causes of light pollution and solutions to it.

So to start the majority of lights in cities and towns across the board are mercury vapor lamps.

The problem with these is that when astronomers do what is called a spectrogram. Where they take in light from a star or planet and break it up into its wavelengths to try and determine what its composition is. Mercury vapor lamps cloud the data of this and make it very difficult to near impossible to do

The other big issue is lamps in general are allowed within every city and town to just be on all the time and to be basically open bulbs that shoot light in every direction. The problem here is that lamps aren't needed all the time and often are left on for no reason, the other problem is that light is only needed generally pointing down but we let it shoot out in all directions. This means that some of the light from every lamp shoots up into the sky further blocking any light from stars and causing many of the negative effects mentioned previously.

[pause]

So hopefully i explained decently well what the exact reasons are for not being able to see the stars at night. But the million dollar question is what can we do about it?

Well for starters just turn off the lights when you aren't using them. Put outside lights on timers or motion detection. When you leave a room turn off the lights so not to create unnecessary light pollution as well as save some money on the power bill. Make sure that the lamps on your street are shielded so all the light is focused downward where you want it. On the bigger scale of things petition to make this happen across the board in your city or town and if enough people do this scientists won't be the only ones enjoying one of the greatest views you can possibly have.

Thanks for listening to Obscurities Episode 2 I'm Andrew Gostomelsky for WHJE Carmel