

Department Chapel 12/03/19

When you think of the greatest human achievements, what are some things that come to your mind? Since we're engineers and physicists, how about greatest **technological** achievement?

It's perhaps cliché, but for me the Moon Landing is pretty tough to beat. Here is a list of big numbers associated with the Moon landing:

- Distance from Earth to Moon: 239,000 miles (roughly)
- Apollo vehicles traveled at speeds near 25,000 mph (Mach 33?...of course there's no sound in space...)
- Saturn V stage-1 produces 7.5 million pounds of thrust
- The Saturn V in total carried 530,100 gallons of fuel (kerosene + liquid hydrogen) and 417,359 gallons of liquid oxygen
 - 1st stage: 203,400 gallons of kerosene fuel and 318,000 gallons of liquid oxygen for combustion
 - 2nd stage: 260,000 gallons of liquid hydrogen fuel and 80,000 gallons of liquid oxygen
 - 3rd stage: 66,700 gallons of liquid hydrogen and 19,359 gallons of liquid oxygen
- The first stage alone burned 4,700,000 pounds of propellant

Maybe as impressive are the **small** numbers associated with the Moon Landing:

- The Apollo Guidance Computer had a "whopping" 64 Kbyte of memory operating at a "robust" 0.043 MHz
- The Goddard Space Flight Center, they used state-of-the-art mainframes that could perform several hundred thousand additional operations per second...with a total memory capacity in the range of MB
- To put it in perspective, the iPhone 6 can perform instructions 120,000,000 times faster than the most powerful Apollo-era computer

Psalm 8:3-6

*When I consider Your heavens, the work of Your fingers,
The moon and the stars, which You have ordained;
What is man that You take thought of him,
And the son of man that You care for him?*

What did they find when they landed on the Moon? Obviously, some profound discoveries about the Moon, its make-up, insights into its composition, etc. But let's be honest for a second. When I thought about "discoveries" from the Moon missions, I couldn't actually think of a specific discovery **the Moon** gave us. They're there, certainly; but I had to look them up. Is that what captured the attention of the world? Even a nerd like me?

What was waiting to greet the astronauts on the Moon?

Nothing.

"Magnificent desolation." It is perhaps my favorite description they gave to the Moon. It sounds like a polite, Southern or Midwestern way of describing the "absolute middle of nowhere." Let's be honest, if you dropped the Abilene landscape on the Moon, only someone with an advanced degree could tell the difference, right? Well, I take that back. Abilene has more green, more water, and smaller craters. But doesn't **that** put it in perspective for you?

No life. No creatures. Now that we've been there, the Moon holds substantially fewer mysteries than before. The wildest hopes for what we'd find are replaced now by the cold realities of what's actually there—fascinating, for sure, for some of us...enough to cure the insomnia of others.

Do you still find the Moon fascinating? I can't help myself. I love it. I could look at it through a telescope for hours. But why?

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Do you have moments where you finally achieve a goal for which you've dreamed so long only to experience colossal let-down? Have you ever idolized a celebrity, professional athlete, or public servant, gotten the chance to meet them, and been thoroughly unimpressed? Maybe you've dreamed of a career in a particular field since you were a child, finally got accepted to an internship in that field, and found it the most loathsome experience of your life. What now?

Acts 17:24-28

The God who made the world and all things in it, since He is Lord of heaven and earth, does not dwell in temples made with hands; nor is He served by human hands, as though He needed anything, since He Himself gives to all people life and breath and all things; and He made from one man every nation of mankind to live on all the face of the earth, having determined their appointed times and the boundaries of their habitation, that they would seek God, if perhaps they might grope for Him and find Him, though He is not far from each one of us; for in Him we live and move and exist, as even some of your own poets have said, 'For we also are His children.'

Takeaways:

Sometimes our dreams are fulfilled beyond our wildest imaginations, but sometimes the destination turns out to be quite a letdown. But the investment we make in the pursuit of our goals is often a joy of itself

Ecclesiastes 5:18

Here is what I have seen to be good and fitting: to eat, to drink and enjoy oneself in all one's labor in which he toils under the sun during the few years of his life which God has given him; for this is his reward.

Imagine if we had not gone to the moon. How much longer would it have taken for us to achieve the technological advances borne out of the space program? Even if you find the actual scientific discoveries from Moon drier than an Abilene summer, every day of your life is affected by innovations gained by the mission. Sometimes, the trip is the best part. The "small" challenges, the intermediate setbacks, the incremental victories, the day-to-day growth. Enjoy them! The labor itself is a gift from God. Keep your eyes on the prize, but don't miss scenery!

One of the lasting images from the Apollo program is the "Earth-rise" over the lunar horizon, taken by Bill Anders aboard Apollo 8. For many, the contrast between the desolate Moon and the colorful Earth has had a profound impact. From Earth, we are awed by the Moon's silvered beauty, teasing us as it wandered for years too far from our grasp, yet close enough to dream. Now, from the lonesome lunar surface, we see the profound beauty in the uniqueness of the world our God created, maddeningly apparently just for us, clumsy bipeds made in his image. What does it say about our God that able as He was to create all of this vast universe around us that He gives thought to creatures such as us? What does it say about our God that He Himself came to give Himself for us on this lonely planet of life? What does that say about how we should live with each other, treat each other, value the unimaginable worth of each other?

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If we are really honest with ourselves, we recognize that life is more than the subset of observations we can verify with repeated testing. The scientific method is a powerful, amazing tool for testing ideas, discovery, and innovation. But it is a cold and lonely life if that is all there is. The biggest testament to that is how we live! None of us live as though life is but a set of facts to be observed and then we die. The Moon is beautiful not because it's a

rocky orb subject to Earth's gravitational pull. If you don't buy that, perhaps you'll buy that you are more than a set of neurons firing above a beating heart caged in a set of bones within a taut leather covering.

He made from one man every nation of mankind to live on all the face of the earth, having determined their appointed times and the boundaries of their habitation, that they would seek God, if perhaps they might grope for Him and find Him, though He is not far from each one of us; for in Him we live and move and exist, as even some of your own poets have said, 'For we also are His children.'

God put curiosity inside each of us. Our desire to seek to learn to question is a gift! It is a part of His nature that in His grace He shared with us. When we look at the Moon, we see the power of His creativity, we see the uniqueness of a world He created for those made in His image, and we see in each other His very fingerprints. But without Him in this discussion...the universe is much colder...lonely. No wonder! It is not in our intellect or abilities that we live and move and find our being. It is in Him. Because above all that the world would tell us we are—among all the ways it seeks to divide us, yes, even on this campus—we are His children. In Him we live and move and exist. And that is a miracle. Even a roundtrip to the Moon can't touch that.