Three Science-Related Speeches:

Carl Sagan, Richard Feynman, and JFK

Carl Sagan: Pale Blue Dot

(0:00) From this distant vantage point, the Earth might not seem of any particular interest. But for us, it's different. Consider again that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every "superstar," every "supreme leader," every saint and sinner in the history of our species lived there – on a mote of dust suspended in a sunbeam.

(1:13) The Earth is a very small stage in a vast cosmic arena. Think of the rivers of blood spilled by all those generals and emperors so that in glory and triumph they could become the momentary masters of a fraction of a dot. Think of the endless cruelties visited by the inhabitants of one corner of this pixel on the scarcely distinguishable inhabitants of some other corner. How frequent their misunderstandings, how eager they are to kill one another, how fervent their hatreds. Our posturings, our imagined self-importance, the delusion that we have some privileged position in the universe, are challenged by this point of pale light. Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity – in all this vastness – there is no hint that help will come from elsewhere to save us from ourselves.

(2:32) The Earth is the only world known, so far, to harbor life. There is nowhere else, at least in the near future, to which our species could migrate. Visit, yes. Settle, not yet. Like it or not, for the moment, the Earth is where we make our stand. It has been said that astronomy is a humbling and character-building experience. There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another and to preserve and cherish the pale blue dot, the only home we've ever known. (3:24)

-Carl Sagan, *Pale Blue Dot: A Vision of the Human Future in Space*, 1997 reprint, pp. xv–xvi

-https://www.youtube.com/watch?v=k-UyQfPhqwo (audio)

JFK: We Choose to Go To the Moon

(6:49) We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people. For space science, like nuclear science and all technology, has no conscience of its own. Whether it will become a force for good or ill depends on man, and only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new terrifying theater of war. I do not say that we should or will go unprotected against the hostile misuse of space any more than we go unprotected against the hostile use of land or sea, but I do say that space can be explored and mastered without feeding the fires of war, without repeating the mistakes that man has made in extending his writ around this globe of ours.

(8:01) There is no strife, no prejudice, no national conflict in outer space as yet. Its hazards are hostile to us all. Its conquest deserves the best of all mankind, and its opportunity for peaceful cooperation may never come again. But why, some say, the Moon? Why choose this as our goal? And they may well ask, why climb the highest mountain? Why, 35 years ago, fly the Atlantic? ... ([Why does Rice play Texas?]

(8:47) *We choose to go to the Moon!* … We choose to go to the Moon in this decade and do the other things, *not* because they are easy, *but because they are hard*; because *that goal* will serve to organize and measure the best of our energies and skills, because *that challenge* is one that we are willing to accept, one we are unwilling to postpone, and *one we intend to win* ... [and the others too] (9:15)

(text and audio source: http://en.wikipedia.org/wiki/We_choose_to_go_to_the_Moon)

Richard Feynman: Fire

(0:00) The atoms like each other to different degrees. Oxygen, for instance, in the air, would like to be next to carbon, and if they get near each other, they snap together. If they're not too close, though, they repel, and they go apart. So they don't know that they could snap together. It's just as if you had a ball that was trying to climb a hill, and there was a hole it could go into, like a volcano hole, a deep one. It's rolling along. It doesn't go down in the deep hole, because it starts to climb the hill and then rolls away again. But if you made it go fast enough, it'll fall into the hole.

(0:35)And so if you have something like wood and oxygen, there's carbon in the wood from the tree. And the oxygen comes and hits it, carbon, but not hard enough. It just goes away again. The air is always — nothing's happening. If you can get it faster, by heating it up somehow, somewhere, somehow, get it started, a few of them come fast, they go over the top, so to speak. They come close enough to the carbon and snap in. And that gives a lot of jiggly motion, which might hit some other atoms, making those go faster, so they can climb up and bump against other carbon atoms and they jiggle and they make others jiggle, and you get a terrible catastrophe, which is one after the other all these things are going faster and faster, and snapping in, and the whole thing is changing.

(1:20) That catastrophe is a fire. (1:22)

- http://english-online.hr/ocean/496#page1 (full text for 4:42 speech)
- https://www.youtube.com/watch?v=N1pIYI5JQLE (full 4:42 audio)