

*Opening Address to the Participants of Exosphere's Copernicus Program
delivered by Founder Skinner Layne on July 13, 2015*

Tonight I would like to tell you a tale, ask you three questions, give you a caution, and leave you with a parting thought.

First, the Tale.

A Prometheus was born near the Vistula River in 1473. We like to think of Prometheus as bold, fearless, and daring. But I think he was not quite like that. I think he was curious--perhaps even morbidly curious--but probably a bit afraid of his own curiosity and what it might mean to the world, not least of all for him.

What if fire from the gods could be stolen and brought to man--what if he didn't have to beg in vain for their favor to shine down upon them and give them this powerful force in their stingy parsimony from time to time?

What if this fire did not only result from strange incantations and cryptic rites, but could be reproduced endlessly if once captured from its gatekeepers?

Prometheus dared to ask these questions, but the questions led him somewhere--he did not merely rest with them. So Prometheus went up to Mount Olympus and stole the fire.

And yet, in this courageous act, he realized that if he spread that fire too quickly, Zeus would know too soon and stop him before everybody had it.

Revolutionibus orbium coelestium was published as Prometheus lay dying and those pages were the torch passed to the new Prometheus whose job it was to spread the stolen flame.

In 1616, Zeus caught up with Prometheus and on the 22nd day of June, Prometheus was forced to recant his heresy--to declare that fire was not fire, that it could not be produced by man, but could only come as a gift from the gods.

He was sentenced to a life of imprisonment, a denial of his freedom, chained to a vile stillness.

But this punishment paled in comparison to the true burden of his scourge. Everything he had ever spoken was made to disappear, with that dreadful word commanded from him, as was commanded of so many others before: **REVOCO**.

And so, thus recanting, his tongue was cut out from his mouth forever, a wordless god among mortals.

But the fire found its way.

For this wordless god managed a few final words before his tongue was cut out, words that would preserve the flame for another Prometheus yet to be born--those words--AND YET IT MOVES--echo throughout eternity.

The fire will never stop burning. it cannot be contained for ever. And most chillingly and hauntingly wonderful, the fire cannot be denied in fact--even as lies may attempt to deny it with words.

We are gathered here today by virtue of our status as heirs of Prometheus. We have been able to find one another in our shared and mutual interest in stealing new fire from the gods precisely because past Prometheans had been willing to steal. Our ancestral Prometheans were willing to give their most precious treasure, their time, in building the theories and tools, the models and applications, without which it is almost inconceivable that we would have ever met, much less be here discussing the array of questions we will explore in these three weeks.

This brings me to the three questions I hope you will begin to ponder during our time together, and a broad framework we hope to build for exploring these questions.

These are questions that transcend the technical feasibility of this or that engineering design or financial model.

The first question is social and political. Who are the Zeuses of today, and what are the mechanisms by which they guard Mount Olympus?

An exploration of this question will help us learn how we best continue our thievery and maybe even keep our tongues in the process.

The second question is hypothetical: are there ways to make peace with Zeus or defeat him peacefully, so that we may take freely of the fires of Olympus?

If so, let us work to define the first steps and how can we can begin taking them.

The third question is ethical, and deeply personal. When your career is on the line. When all the badges and trophies are at risk of being thrown into the abyss. When the salaries and endowed chairs are being threatened with termination, and the grant applications of permanent denial--if that moment ever comes, will you have the temerity to mutter under your breath, under the judgment of your Zeus, "**AND YET IT MOVES**"?

The father of modern observational astronomy, the father of modern physics, the father of modern science could not be saved by his intellect from enduring the consequences of his theft. But he did not go quietly--will you?

Think about these questions, ponder their implications. Consider what they require of you. But be hesitant to answer them too readily, too boldly, too unequivocally. Answers all too often lead us to a dangerous hubris that can blind us to truths we have yet to uncover.

As you get to know us here at Exosphere, I hope that you will find the spirit of curiosity alive and thriving, that we are quick to ask and slow to answer, and that we appreciate thoughtful questions more than clever-sounding explanations. Our hope is to always be willing to embrace nuance, even when a simplistic solution would save time and energy.

We are working to create an atmosphere of collegiality, openness, and mutual respect, but it is a responsibility each of us bears individually--to withhold sharp criticism that carries no value to the process, to fight our inner trolls and refrain from seizing the ever-tempting opportunity to show off our cleverness with a retort that begins "well, actually."

Now, the caution.

As you take up your Promethean torch and spread its flames far and wide, not hiding them in the sterile cloisters of academic halls, not confining them to the stultifying boxes of grant proposals, or suffocating them in the proprietary journals bereaved of oxygen for decades.

As you take this flame to the popular media, embed it in the arts, tell stories about it to school children--and even give them a glimpse! And help their skeptical and fearful parents embrace the path into the future that it represents, there is something you might lose sight of.

“When I heard the learn’d astronomer,
When the proofs, the figures, were ranged in columns
before me,
When I was shown the charts and diagrams, to add,
divide, and measure them,
When I sitting heard the astronomer where he lectured
with much applause in the lecture-room,
How soon unaccountable I became tired and sick,
Till rising and gliding out I wander’d off by myself,
In the mystical moist night-air, and from time to time,
Look’d up in perfect silence at the stars.”

Be afraid to lose sight of what Walt Whitman’s Learn’d Astronomer could no longer see. Through your figures and models, and complex theories, don’t lose sight of the beauty, the splendor--do I dare even say the mystery of the Nature you are coming to understand, and to transform.

And finally, the parting thought...

To continue the Copernican Revolution, we must place ourselves at the center of *our* story, but must avoid the temptation to place ourselves at the center of the universe, or our story at the center of human history. Many have come before us, and many will come after us. We are merely responsible for carrying the torch while it is in our charge.

We can also ill afford a naive faith in the Idol of Inevitable Progress, that alluring Siren who lulls us into complacency and finds satisfaction through inaction. The mood of Zeus is inconstant, and though we may steal some fires freely today, we may be viciously pursued for stealing other fires tomorrow.

Each epoch in the evolution of human consciousness adds a new ring to the broadening trunk of the Tree of Knowledge.

Let us labor together for for a long spring, a prosperous harvest of the year’s fruits, and hope together for a late frost, that we may add unprecedented circumference to that resilient oak, and...prepare the way for those to whom will fall the burden of surviving the next winter.