Sometimes, everything really IS rocket science.

Even for NASA, nothing in life is a given, no matter how many successes, and no matter how high the zenith or how far the apogee.

Witness the crash of a moon lander in a recent test, an embarassing *oops!* after so many wins, the most recent -- and perhaps most extraordinary in some time -- the safe landing of the one-ton rover *Curio sity* on Mars.

No surprise: Building knowledge, and finding your way along in the dark, is slower than running down familiar routes in broad daylight. It's especially true, out on the edge, where no one has been before.

Starting a path is a lot trickier than following a rut.

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Miscellaneous mind-stubbers you may enjoy:

Like to experience space exploration fever even though crewmember applications are closed? Cornell University and the University of Hawaii have some specs posted for their 120-day, simulated Mars mission:

http://manoa.hawaii.edu/hi-seas/#selection

Here's a great discussion on some fine Freakonomic angles involved:

http://www.freakonomics.com/2008/01/11/is-space-exploration-worth-the-cost-a-freakonomics-quorum/

If you would enjoy having an excellent paper-bound book on NASA spin-offs we've all enjoyed in modern life, a copy can be sent to you free, by clicking "Request Spinoff" on the menu bar right here:

http://spinoff.nasa.gov/Spinoff2011/index.html

PDF Files are available at this page, too. However, if you would like the booklet, please play kindly, as that email address you will see goes to a real, live human being who is very nice.

If you'd prefer to fish NASA's large site online, do a search for "spinoff" right here for lots of places to start:

http://search.nasa.gov/search/search.jsp?nasaInclude=spinoff

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Stray Thoughts

When it comes to Science, everyone looks around for Albert Einstein, to make sure he speaks first. There's no exception here and now, as he makes a great point:

"If we knew what it was we were doing, it would not be called research, would it?"

I suspect Einstein would be in the wings, trying to encourage us to do more general research, rather than completely default for such things to all be done overseas anymore.

He'd probably also say that whatever smatterings of research are left that we actually do in this country don't count, if all we are researching is the pursuit of products that simply morph slightly from one generation to the next.

The secret of pursuing knowledge is to keep asking interesting questions, and making the search fun, while quizzing the universe about its various sleights of hand and tricks of the eye.

Arthur C. Clarke, the father of satellite communications, said:

"Any sufficiently advanced technology is indistinguishable from magic."

That says it pretty well, too. Sometimes, to get through, you have to lean on magic.

Greatness lies not in how many goods we can amass, or how many digits on a spreadsheet we can accumulate, nor in dying with the most toys or the fanciest possible coffin.

That greatness lies in how we live this life, and in who and what we care about. As Mark Vonnegut, son of Kurt Vonnegut, wrote:

"We're here to get each other through this thing, whatever it is."

Here's hoping his dad was wrong, when he said:

"We could have saved the Earth but we were too damned cheap."

In time, perhaps this Native American proverb will make a helpful and hopeful resurgence as we all reconsider ideas of sustainability:

"We do not inherit the Earth from our ancestors, we borrow it from our children."

Greatness is not about beating one another to death with ever-improving bones and rocks, but in creating new and better dreams we can all build and occupy.

We never know where the best answers will come from in solving our problems, but the trend seems certain: *Science.*

The days of Rugged Individualism -- if they ever truly existed, for no person walks through life unaided and alone from birth -- are pretty well over. And cutthroat competition has also run its course, its deep tread gouges carved right across the globe.

21st Century. Time to wake up, time for much more cooperation and working together. *Space* is rocket science --
not
the need for people to be working together.

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NASA first gave us a photograph of our home, seen from space, illuminating Chief Seattle's thoughts in a way we could not have foreseen before that big blue ball with its swirling clouds

came into human view:

"The Earth does not belong to man; man belongs to the Earth."

NASA needs to keep helping us see that bigger picture. If we can interest enough children in Science, we may yet have a chance to hear them speak their answers to us all.

We sure won't be running out of questions about our world, and the universe, anytime soon.

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Oscar Wilde gets the last word here, as I imagine he almost always did in life:

"We are all in the gutter, but some of us are looking at the stars."

More links and information:

Oops -- the moon lander:

http://www.npr.org/blogs/thetwo-way/2012/08/09/158504307/nasa-moon-lander-crashes-and-burns-during-test-flight

Animation of Curiosity's planned path to landing on Mars:

http://www.youtube.com/watch?v=FZYnIsLNz3c

Still-amazing animation of how previous rovers arrived:

http://www.youtube.com/watch?v=XRCIzZHpFtY

Spotted on Mars -- and more great info:

http://www.bbc.co.uk/news/science-environment-19262486

Curiosity's landing sequence:

http://www.nasa.gov/mission_pages/msl/news/edl20120809.html

More on Curiosity:

http://www.jpl.nasa.gov/education/marsrover.cfm

http://www.bbc.co.uk/news/science-environment-19201742

Fact sheets and press kits/details -- clink links on this page:

http://mars.jpl.nasa.gov/msl/news/newsroom/

For children of many ages:

http://mars.jpl.nasa.gov/msl/

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Whoops, I stand corrected: Mark Twain, insightful curmudgeon extraordinaire, sneaks in this last thought:

"Sometimes I wonder whether the world is being run by smart people who are putting us on, or by imbeciles who really mean it."