

“When The Best Must Do Even Better”

Remarks

by

NASA Administrator

Daniel S. Goldin

At the

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I'd like to thank David Baltimore, the head of Cal Tech. David actually canceled plans to be here today. I think that is just a small expression of his strong support to people here and the work they do. Thank you, David.

I'd also like to acknowledge Admiral Inman, head of the JPL Oversight Committee at Cal Tech. He couldn't be here today, but I talked to him by phone. His commitment to the team here is also unwavering. And I thank him for that.

As I was flying out to California last night, I thought back to one of my early visits to JPL.

It was about eight years ago -- just two months after I was fortunate enough to be named Administrator of NASA, by the President of the United States. The head of the best organization in the world, bar none.

Some of you may remember that visit – I was the quiet and unassuming one, Mr Congeniality.

Kidding aside, for a lot of us, it wasn't an easy day.

How do you tell the group that has no equal when it comes to exploring the outer limits...

that it was time to explore the inner-workings?

That it was time to do things differently?

That if we wanted to continue along the path of discovery...

we all needed a new roadmap to get there?

How do you say all that? Well, I just said it straight out.

I'm quiet... unassuming... and don't forget... I'm very subtle.

I remember one of the meetings I had in particular. I like to call it the “Catch 22” meeting.

The abridged version goes something like this.

I started with the pitch.

I said to that particular group the same thing I said to all of you in a larger meeting.

Tell us how we can implement our missions in a more cost-effective manner.

Tell us how we can improve everything we do without compromising safety.

Tell us how NASA can be “Faster, Better, Cheaper.”

When I finished, a few of the engineers stood up and said: “Mr. Goldin, we hear what you’re saying.

We even have some great ideas. But there’s more to it.”

“If we take a chance...

if we use new technologies

if we try new managerial approaches...

if we develop that exciting new design...

the powers-that-be will ask: Is it risk-free? Has it flown before?”

“We will say, ‘No, it hasn’t flown.

It’s new and different. It won’t fly unless and until **you** [senior management] fly it.”

“They will say: OK. Fine. Sounds good.”

“Bring it back to me after it has flown.”

It’s hard to change... even when you have little or no choice.

That’s why I made a pledge to all of you.

I said that we wouldn’t be overly prescriptive because you know this place better than anyone else does.

I said we wouldn't be micro-managers -- authority and responsibility would belong totally to you.

But most of all, I said never forget that you are the best and brightest. I empower you to take some risks.

Don't be afraid to push the envelope. Press the boundaries.

Do things that have not been done. Fly things that haven't been flown.

There will be some failure, but when it occurs...

we will face the problem together... and fix the problem together.

So, by all means, have the confidence to take risk. Your courage will be rewarded.

Today, before I say anything else, let me say thank you to each and every one of you for accepting that charge.

And let me recognize one group in particular that I am incredibly proud of.

I had dinner with the leaders of the Mars 1998 Team last night at Monty's here in downtown Pasadena.

I was very candid with them.

I told them that in my effort to empower people, I pushed too hard...

and in so doing, stretched the system too thin.

It wasn't intentional. It wasn't malicious. I believed in the vision... but it may have made failure inevitable.

I wanted to demonstrate to the world that we could do things much better than anyone else.

And you delivered --

you delivered with Mars Pathfinder... With Mars Global Surveyor... With Deep Space 1.

We pushed the boundaries like never before... And had not yet reached what we thought was the limit.

Not until Mars 98.

I salute that team's courage and conviction. And make no mistake: they need not apologize to anyone.

They did not fail alone. As the head of NASA, I accept the responsibility.

If anything, the system failed them.

And for that reason, even the best must do better.

And just as we cannot let a mission failure diminish our success...

we certainly cannot allow it to detract us from our goals...

cloak us in the shroud of the timid...

or worse, paralyze the agency in a straight jacket of indifference and inactivity.

If there is one thing that I have learned as NASA Administrator, it is that our nation's space program is strong, it is relevant and it is vital to every American...

not because how we react to success, of which there have been many...

but how we learn from failure, of which there have been few.

When we suffer a setback, we must learn from mistakes and, yes, move on -- continuing to push back the boundaries of the unknown...

continuing to imagine what might be possible...

And by God, continuing our effort to land on Mars and one day send astronauts there. You will do it.

Simply put, our mission, to explore the frontiers of space... and to enrich life here on Earth...

is simply too exciting, too inspiring, too important to do anything else.

For that reason, more than any other, even the best must do better.

The proof for all of this is in the numbers. It's in the missions. It's in the long-term vision we set.

When I accepted this job I was committed to giving the American people what they wanted – a vibrant space agency that did more with less.

Since we changed our approach in 1993, the NASA budget has decreased by 5 percent without taking inflation into account.

While the budget for other discretionary agencies like NASA has increased by 15 percent.

We listened to what the American people said in the elections of '94, '96, and '98.

But – and this is a real testament to the NASA team...

as our budget went down, our number of missions went up.

The success is indisputable.

Since 1992, overall we have launched 146 payloads into space with a value of 18 billion dollars.

The total losses have amounted to just half a billion dollars, or less than three percent of the total payloads value.

Planetary spacecraft, which used to be launched twice a decade...

are now launched each year at a fraction of the cost—thanks to you.

More specifically, there is no better evidence of that than the work that's been done right here.

Since 1992... You have given us Earth Science missions like:

SRTM – its radar mapping that enables us to monitor the activity in the Earth's crust that often precedes earthquakes and volcanic eruptions. And, as I told the team this morning, it is going to help make the airline travel much safer.

QuickScat – which uses microwave signals to measure wind over our oceans and helps us track storms and hurricanes. It was developed in only one year from start to completion-- a feat never done before.

MISR on EOS-Terra – which is giving us valuable insight into the vegetation that covers our planet.

The list goes on and on.

Maybe its only parallel is what all of you have accomplished in Space Science.

Whether it is Mars Pathfinder with its revolutionary airbag... or the Mars Global Surveyor... both of which have brought us closer to the Red Planet...

Whether it is Cassini -- which has successfully completed its flyby of Earth... and is now on its way to Jupiter and Saturn. And I salute John Casani, who is there in the back. I pushed him hard too.

Or whether it is Stardust which is collecting cosmic particles...

or Deep Space 1...

or Galileo, with its new lease on life out among the moons of Jupiter...

or the work on the telescopes that allow us to look to the heavens and peer into the farthest reaches of the Universe...

Let there be no doubt:

JPL **is** and **will continue to be** the Center of Excellence for America in Deep Space Missions.

We can't forget, though, that more missions doesn't only mean more science.

More findings can also mean a chance for more failures.

In fact, that's one of the things we anticipated. We expected 2 or 3 setbacks out every 10 missions.

We're proud of that record, but we're also well aware that the failure rate has gone up significantly over the last two years.

We are still -- roughly -- within the bounds I set -- 2 or 3 failures to every 10 missions.

But the warning bells of a trend are sounding. And that trend is sobering. One that none of us can ignore.

It says that we pushed too hard -- that we're approaching a near-term breaking point.

That's why we asked Tom Young to take that hard look that he did.

That also happens to be why I'm here today -- not to say this is what you did wrong, but rather to say we need you more than ever before.

We need you to help us fix the problems so we can realize JPL's and NASA's bold vision.

And continue to press forward to test the next boundary to try new techniques to accomplish our missions even faster, and I underline better, and cheaper.

The goals are risky. They will be difficult.
And there's a chance we'll encounter setbacks along the way.

But we are sure to come up short if we do not learn from our mistakes.

Failure often leads to greater success, but that's not an excuse. Nor is it a given.

If the recent setbacks are to clear the way for future advances, we together must make it so.

I'm not here with a "one size fits all" solution. The real answers will take time and cooperation.

And I will be back – both to meet with you as a whole and in smaller groups – to discuss your plans on how we can fix the problems. And that great leader Ed Weiler will be back with me along with others from Headquarters. Not to criticize, but to listen.

And we will listen to **your** plans.

The Young report makes clear that we have three main areas to work on – communication, training and mentoring, and oversight and review.

At Headquarters that means, we must realize that, as I mentioned earlier, we have pushed too hard.

We must ensure that the appropriate checks and balances are applied to all the work we assign to JPL.

We must take into account the inherent difficulty of our planetary programs.

Although we should not let the pendulum swing too far the other way, we need to give you more margin, more flexibility, and adequate institutional resources to support your programs. I told that to Rich Cook and John McNamee last night.

I have charged Ed Weiler -- the Associate Administrator for Space Science -- with making sure we carry that out.

We must give you a single point of contact – and in the new Director of the Mars Program, Dr. Scott Hubbard, that will happen.

And finally – to put it plain – we **all** need to listen better, not just transmit better.

But ultimately the answers we all seek are in this very room. They are sitting right next to you.

Now is the time for a self-assessment that is open and full at JPL.

Ask every question.

How do you fix the mistakes and make sure they don't happen again?

What can you do to validate your operating procedures?

What tools do you need to stay aggressive...

to keep pushing the envelope...

to keep taking the risks that have brought so much reward?

Are the steps we are taking working?

Are the recommendations that will be put forth by senior management good ones?

And this I empower you—challenge your senior management. It takes everyone to understand the process. And the lesson is...everyone needs to listen better.

I'm not inferring anyone is bad. I'm just saying we need to have a stronger process of listening.

Do they encourage you to try the new “Faster, Better, Cheaper” technologies?

Are they allowing you to press the boundaries?

Are you receiving the right training and mentoring?

Do you need more?

I have asked NASA's Chief Engineer, Brian Keegan, to put together a matrix that will incorporate NASA's responses and actions to all the reports beyond the Young report, work closely with Ed Stone.

But let me say this: if you have a question that has gone unanswered...

a recommendation or an idea that needs an outlet...

or a comment that needs to be heard...

Bring it up.

Make sure you say something. Don't hold it in.

Too often people don't want to speak up because they are afraid of the reaction their word will bring.

Sometimes they are afraid of a business loss.

Other times they are worried about how a boss will react.

We need to hear from you because you are closest to these projects. You know them best.

Never let worries escalate so much that you feel you cannot communicate your fears.

I can't promise any quick fixes. I can't promise that there won't be changes.

But, at NASA, people will never be punished for telling the truth.

That is a commitment and a binding promise to you.

I usually end my presentation by answering some of your questions.

I'm not going to do that this morning.

There are just too many detailed questions and it is too soon for me to give you the answers you deserve.

And I really think those answers need to come from your leaders here—from Ed Stone, from David Baltimore, not from the NASA Administrator.

In lieu of Q & A, I would like end by sharing a story about my mother.

I don't tell it often. But you're family.

Right before my father passed away about four years ago, my mom was diagnosed with a life-threatening disease and had major surgery.

It was pretty bad and, especially after just losing her partner of over 60 years, my sisters and I weren't sure if she'd survive.

But my mother is an incredible woman. And she decided that she was still young, and that she wanted to live.

The doctors told her they would have to prescribe radical post-operative therapies.

My sisters and I—in our infinite wisdom—sided with the doctors and tried to convince my mom that she needed the radical treatments.

“They know what they're doing. They've had the best training. This isn't a cold we're talking about.”

My mother is incredible... she's also incredibly stubborn.

She absolutely refused to have the recommended therapy.

She said: “I'm 84 years old. That stuff will kill me. It's my body and I know what's best for me.”

So she started to do research and ultimately, believe it or not, convinced her doctors that a less radical therapy was the way to go.

I say “convinced” – the doctors would probably say “beaten into submission.”

Four years later, my mother is 88 years old and doing great.

She travels all over the country on planes by herself. She plays with her great grandchildren. She has a ton of energy.

Unfortunately, her children still side with the doctors every time they prescribe something.

But our pleas are met with the same response:

“It's my body. I know what's best.”

I know what you're all thinking.

It's a good thing that stubbornness and the “I know best” attitude doesn't run in the family.

The point I want to make is not that JPL is sick and needs treatment. And I'm not saying ignore your doctors.

Far from it.

The point I want to make is that nobody – nobody – knows this place like you do.

The only people who can prescribe the exact remedy for JPL are those who work at JPL.

Only you know about the individual genius that resides here.

Only you know about the wonderful chemistry that is created here when a team of scientists and engineers works on a tough challenge.

Only you know of JPL's sheer desire to open the space frontier for future generations.

Because it is all of you who know JPL best... It is all of you who control the destiny of America's deep space program.

So I'll leave you today with a challenge similar to the one you responded to so well 8 years ago.

You are still the best and brightest – nothing in any report tells me otherwise.

Assess yourselves and this Laboratory with the same vigor – the same courage, conviction and confidence – the same heart and soul – that have always set you apart from everyone in the world.

And as you do, remember this:

A problem can be fixed. A spacecraft is hardware that can be rebuilt.

The science has not been denied...it has only been delayed.

But the exuberance, pride, and spirit that each of you bring here day-in and day-out is absolutely irreplaceable.

I'll say it again: irreplaceable.

Just outside my office at headquarters, there is quote from Teddy Roosevelt – something I find important in helping me carry out my job, something he said at the dawn of the 20th century.

“Far better to dare mighty things, to win glorious triumphs, even those checkered with failure, than to rank with those poor spirits who neither enjoy

much nor suffer much, because they live in the gray twilight that knows not victory or defeat.”

On the dawn of this new century and this new millennium, we know both victory and defeat.

And because we do, let our spirit be both rich and ready.

Let’s do as we have always done – dare the mightiest of things.

And then, let’s do what the American people have come to expect from us... have the confidence and take the risks that can bring those glorious triumphs ...

on Earth...

on Mars...

and wherever America’s dreams take us.

Thank you very much

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