

YouTube Story Board:
People, Space & the 21st century,
Part 1, MOVE

Tom Riley
BMD@BigMoonDig.com
 The Big Moon Dig
 SBMOVEmmdyy.docx

January 2, 2017

Pro proof

Description:

People need the positive vision of the future that space exploration provides, particularly in these challenging times. The way we did Apollo to the Moon in the 1960s with a huge government program, simply will not work now. Fortunately we have all the elements we need to build a 21st century human space program over the Internet. Here's how.

Purpose: This video proposes a space exploration program for the 21st century.

Intended Audience: Young Adult.

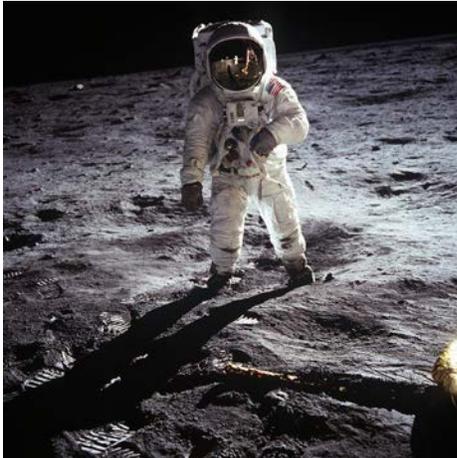
YouTube: TBD

Storyboard:

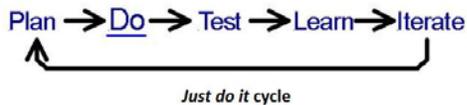
Graphic

Dialog (Critical column for editing)

 <p>Title, author, BMD, Smiling Face Time: 10 s</p>	<p>No voice Rocket sound fading in</p>
---	---



Apollo to the Moon photo by NASA



A Time: 41 s

Its History:

In the mid-20th century we had a giant government program that put human beings on the Moon.

In the 21st century, that particular path to space is simply not open to us.

It does not matter that Apollo to the Moon was on most people's top-five list of the greatest human accomplishments of the 20th century. The historical elements that drove Apollo to the Moon simply no longer exist.

It ain't gonna happen again.

What we **can** do is: organize an enormous number of people over the internet into effective action on the great problems of the 21st century. This video is about how to do that for human space exploration.



The Need:

This does not mean that the need for human space exploration has gone away.

Recently a major motion picture, and a major TV mini-series were released. Both were set on Mars and both were very realistic. Both drew huge audiences.

Also both depicted the Apollo style approach to funding and organization, but they opened up the process to include the governments of more countries and private corporations.



“The Martian” by 20th century Fox



“Mars” by National Geographic

B Time: 114 s

No go!

It is not inadequate technology that is really holding us back from space; it is this type of organization. In the face of many great problems in the 21st century this level of government resources will simply not be available.

Some progress has been made in the commercialization of space. For example, the latest and greatest rockets come from companies, not the government. However, this path is limited because their primary customer is still the government.

There are a few successful commercial space products, like communication satellites, but these have limited markets and do not involve the human exploration of space at all.

Above all, the problems on Earth of the 21st century are even greater than those of the 20th, for example climate change and sea level rise. We cannot strip these efforts of funds to blast off into space, but we still need the outward vision provided best by space exploration to keep our view of the future forward and positive. This need is stronger than ever.

That forward, positive vision, for example, can serve us well in our fight against religious extremists.

The biggest lesson I see from these depictions is simply that we do not yet know enough to go to Mars. We first need a really massive learning experience. This we must get for ourselves, and our most practical classroom is the Moon.



MOVE:

- Massive -- Worldwide
- Online – Internet based
- Vetted – Work your way up
- Expedition – We are headed out

C Time: 61 s

MOVE:

The 21st century is a different time from nineteen sixty-nine with different needs and different technologies. Our cell phones now have better computers than the Apollo lunar module had. We need a different approach and here is our proposal:

MOVE for Massive, Online, Vetted, Expedition.

Massive: The effort will involve millions of people from all over the world.

Online: The effort will be organized over the Internet and will have many elements so all participants can find at least a small place for themselves.

Vetted: The effort will be in stages with the most successful people in each stage moving on to the next.

Expedition: In the end we will establish a settlement on the Moon and from that effort learn enough to move on to Mars. We will build our knowledge and move out from Earth.

This approach is only in its infancy and will take a great amount of work from many people to achieve this mission. But, we need not wait for others; we can start the effort now.



Tell the Story:

Where do we start?

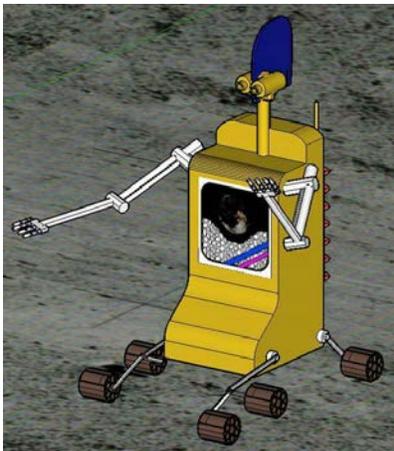
In Apollo to the Moon we told the story best only after the fact, for example, through movies like *Apollo 13*. This time we need to start the stories early to invite people to buy in once more to human space exploration.

We at the Big Moon Dig have started this process and are in action. We are developing stories and short videos that can provide people with visions of their futures throughout these interesting times. Our pieces generate buy-in for action. Please contact us for examples (see below) or Google “The Big Moon Dig.”

As for me? I’m just Digger03, an artificial intelligence from the Big Moon Dig stories, talking to you from the Moon.



Big Moon Dig emblem by Tom Riley



Digger03 by Big Moon Dig

Story Index

The Big Moon Dig:

1. "The Big Moon Dig" – Introduction of the concept of a massive Earth-side effort to establish a lunar base.
2. "Stanford's Digs" – A story about AI's as people.
3. "The Lunar Viper" – Coming of age on the Moon.
4. "The Dark of the Moon" – Coming to grips with ones limits.

Iron Seas:

1. "The Fid" – Understanding sea level rise.
2. "The Cabin Boy's Tale" – Doing something about it.
3. "The Captain's Tale" – Dealing with it when things go wrong.

BigMoonDig story index

D Time: 46 s



The Early Steps:

We have made a start with a few early steps:

BMD Website:

We do have a website that contains listings of our stories and videos as well as lots of background materials and our reference list.

The BMD Forum:



BMD YouTube Index:

1. "People, Space, & the 21st Century"
2. "Remembering the Future"
<https://www.youtube.com/watch?v=EVhiN5gNGZg>
3. "The Supreme Court Skunks the Turning Test"
<https://www.youtube.com/watch?v=eIz10nNbhFk&t=2s>
4. "Buy-In for Earth"
<https://www.youtube.com/watch?v=NSoGaGOZsmU>

Big Moon Dig Blog

Return to the Moon with us now to prepare the ground for a real lunar settlement through study, simulations, team building, and exploration.

HOME ABOUT THE BIG MOON DIG SAMPLE PAGE

New YouTube: Remembering the Future Search

LIBRARY:

We have a new YouTube out. It builds on the remember the future idea from the movie "Interstellar".

RECENT POSTS

New YouTube: Remembering the Future
Production Break as We Begin Addressing the Great problems of the

Big Moon Dig Blog
E Time: 33 s

One of the first steps is to establish a forum to work out the details of MOVE’s multi-faceted design. We now have a start with the Big Moon Dig Blog, but much more effort is needed.

This is going to be a long path that nobody can possibly travel alone.



Design:

- Management – How are going to do this?
- Finance – How are we going to pay for it?
- The Story – Envision the future
- The Game – Learn and practice
- The Mission – Detailed planning
- The Science – Real
- Education – Materials
- Software – Gain control
- Hardware – Challenges with mass

F Time: 123 s

Design:

Before we get too committed to any specific action, we need to work out exactly what we are trying to do. The first stage will require a lot of designing of the later stages:

Management: How will we manage such a complex effort? Can we make it truly democratic?

Financing: How will we raise money? Clearly we will need cloud funding, sponsors, grants, and government contracts at one time or another. Later on, material delivery to the South Polar region of the Moon costs about 1.5 million dollars per kilogram and we will need tens of kilograms delivered. We can’t just call UPS.

The story: Can we organize technical people to describe the future environments of our stories, called a Field of Our Future (FOF)? Can we organize amateur writers to write the stories? We now have the stories professionally edited, should we have them professionally written as well? Should we now move on to write a book or to make a movie?

The game: An enrolling computer game design is expensive and complex. Again can we do it with a cloud effort or do we need to hire professionals? Do we need a commercial sponsor for this specific element?

The Mission: Can we analyze the current crop of great lunar data into the detailed terrain maps, sun angles, and photography that we need to plan a real space mission? We already have had some success with in this area.

The Science: How can we do real science in our efforts?

Education: How can we turn our experience into educational materials?

The Software: We will need game software, mission software, and controllers for the robots. They will need at least enough artificial intelligence to keep themselves safe.

The Hardware: Can we design all the hardware we need, starting with an explorer rover, and a lunar digger? Can we build and test prototypes on Earth?

There is a lot of work to do.



The Game:

- Learning and practice – What you need to know
- Design challenges – Who has the best ideas
- Vetting – Who advances to the next level
- Buy-in – Get in action, stay in action

G Time: 92 s

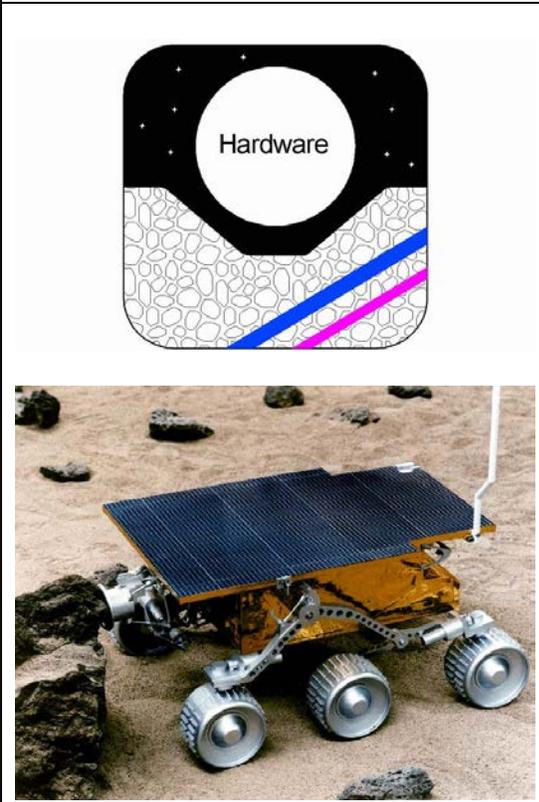
The Game:

Under MOVE, the Big Moon Dig Game, or rather the series of games, courses, and challenges that we call “the Game”, will be the door most people will open into our effort.

These games will be the key to teaching people everything they need to know. For example, what knowledge is needed to design a lunar rover? The Game will also teach skills like tele-operation of remote robots on the Moon.

Under MOVE, the Vee stands for vetting and the game will be our chief vetting tool. It takes at least one thousand hours of practice just to find out if you are any good at something, whether athletics or playing a musical instrument, or in this case, tele-operating a lunar rover. The Game is how people get their time in. In all human efforts, once the hours are in, a few people will turn out to be astonishingly good at the skill. These are the people we need to find to move up to the next level.

The Game and the stories are the keys to inviting masses of people to buy into our project. Buy-in is a key human capability that is responsible for all major projects, from the Great Pyramids, through the Gothic cathedrals, to Apollo to the Moon; it gets people into action and keeps them in action. To get buy-in to work, the person must be invited to imagine themselves personally succeeding in the project. The vision may be brief but it must be very clear. Words then turn out to be the best way to get people to day dream and, through those dreams, to buy in.



Sojourner by NASA

Hardware on the Moon:

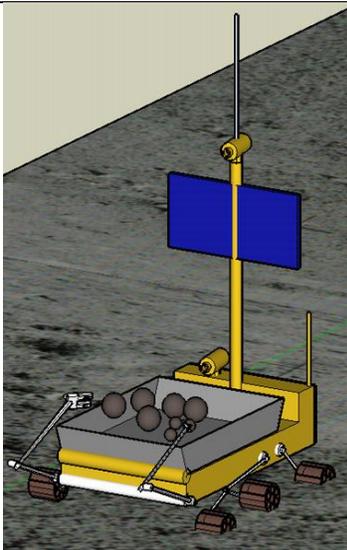
We are now in the early days but we do need to at least mention the hardware we need to design and build.

We will need a lunar explorer of the Sojourner class. It must be small and low in mass (about shoe-box size), yet able to travel great distances over the lunar surface. It must be able to handle a grade of at least 15% even on a surface of fine dust. It must be tele-operated from Earth but have enough smarts to keep itself out of trouble.

We need a lunar digger. Why we need so many trenches will be explained later in this video series and in our stories. It turns out that digging in the Moon's one sixth gravity and on its surface of fine dust is very difficult.

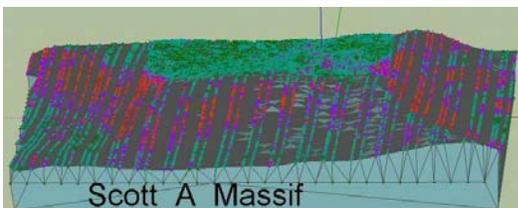
Our hardware designs need to start with Earth versions that can be 3D printed and controlled with the microcomputers that millions of Makers can even now program. The building and testing of these prototypes will be key challenges.

When we send something to the Moon, we must know what we are doing. By the time we send someone to Mars, we must know **exactly** what we are doing.

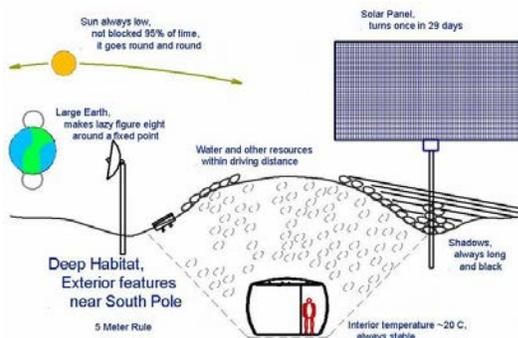


Digger03 as hardware

H Time: 68 s



Scott A Massif by Big Moon Dig



Video Series:

I have taken enough of your time for now. The rest of this video series will follow in two more parts:

In Part 2, Location, we will look at how determined amateurs can now reduce NASA lunar data to find great locations for a settlement. The data are out there.

We studied the data from NASA's Lunar Reconnaissance Orbiter (LRO) and, working on a home computer, found our first candidate for a lunar settlement location.

It is the Scott A Massif, about 120 kilometers from the lunar South Pole. It is a peak of eternal light and is within easy rolling distance of several permanently shadowed craters. All in all, it is a gift from the gods.

In Part 3, Habitat, we will look at key questions in the design of lunar habitats and finally answer the question: Why all the digging?

We will also discuss why our photovoltaic panels stick straight up, what a tomato tree is, and why our exercise center is so different.

And we will revive the art of the kern.

Look for these parts soon.

Watch for Hashtag: #BigMoonDig

<p>I Time: 70 s</p>	
<div data-bbox="310 281 618 590" data-label="Image"> </div> <p>In Conclusion:</p> <ul style="list-style-type: none"> • We cannot do Apollo to the Moon again, period. • We can use 21st Century technology to do human space explorations in new ways. • MOVE for Massive, Online, Vetted, Expedition • The Moon is our classroom on the way to Mars <p>Watch us for more parts. Welcome to the 21st Century.</p> <p>Text on plane background</p> <p>J Time: 28 s</p>	<p>In Conclusion:</p> <p>We cannot do Apollo to the Moon again, period.</p> <p>However, we can use 21st century technology starting today to accomplish human space explorations in new ways.</p> <p>We propose: MOVE for Massive, Online, Vetted, Expedition.</p> <p>The Moon is our classroom on the way to Mars.</p> <p>Watch for new parts of this series in 2017 and please join us.</p> <p>We can make this happen.</p> <p>Welcome to the 21st century,</p> <p>Digger03 The Big Moon Dig</p>
<p>Attributes:</p> <ul style="list-style-type: none"> • Attribution-NonCommercial-ShareAlike (CC BY-NC-SA) • Voice: Paul NaturalReader13 • Titian 3 sounds by NASA • Apollo Astronaut by NASA • “The Martian” poster by 20th century Fox • “Mars” poster by National Geographic • Sojourner by NASA • All other graphics by author <p>Credit for the Graphics, etc. Time: 6 s</p>	<p>Rocket Sound fading in</p>
<p>References:</p>	<p>Rocket sound fading out</p>

<ul style="list-style-type: none">• The Big Moon Dig, http://bigmoondig.com/BigMoonDig.html• Digger03, BMD@BigMoonDig.com <p>#BigMoonDig</p> <p>References: Time: 6 s</p> <p>Total: ~ 11:35 mm:ss</p>	
---	--

YouTube text description: (First sentence is critical for editing)

People need the positive, look-ahead vision of the future that space exploration provides, particularly in these challenging times. The way we did Apollo to the Moon in the 1960s with a huge government program, simply will not work today. Fortunately we have all the elements we need to build a 21st century human space program over the Internet. Here's how:

We build a MOVE for Massive, Online, Vetted, Expedition.

Please join us.

Enjoy,

- The Big Moon Dig, <http://bigmoondig.com/BigMoonDig.html>
- Digger03, BMD@BigMoonDig.com

#Space #BigMoonDig