

Ode to Happiness for Sunday February 7 2021

## **Apollo 14 Heads for the Barn, February 7, 1971**



Fifty years ago today, the crew of Apollo 14 left lunar orbit and headed for home. They watched this Earthrise from their command module Kittyhawk.

With Earth's sunlit crescent just peeking over the lunar horizon, the cratered terrain in the foreground is along the lunar farside. Of course, while orbiting the Moon, the crew could watch Earth rise and set, but from the lunar surface the Earth hung stationary in the sky over their landing site at Fra Mauro Base.

Rock samples returned from Fra Mauro included a 20 pound rock nicknamed Big Bertha, determined to contain a likely fragment of a meteorite from planet Earth. Kept on board the Kittyhawk during the Apollo 14 mission was a canister of 400-500 seeds that were later grown into Moon Trees.

### Crew

Alan B. Shepard Jr., Commander

Edgar D. Mitchell, Lunar Module Pilot

Stuart A. Roosa, Command Module Pilot



The primary objectives of this mission were to explore the Fra Mauro region with deployment of the Apollo Lunar Surface Scientific Experiments Package, or ALSEP; lunar field geology investigations; collection of surface material samples for return to Earth; deployment of other scientific instruments not part of ALSEP; orbital science involving high-resolution photography of candidate future landing sites; photography of deep-space phenomena, such as zodiacal light and gegenschein; communications tests using S-band and VHF signals to determine reflective properties of the lunar surface; engineering and operational evaluation of hardware and techniques; tests to determine variations in S-band signals; and photography of surface details from 60 nautical miles in altitude.

During the two traverses, the astronauts collected 94 pounds of rocks and soil for return to Earth. The samples were scheduled to go to 187 scientific teams in the United States, as well as 14 other countries for study and analysis.

The liftoff of Antares from the lunar surface took place precisely on schedule. Rendezvous and docking occurred only two minutes later than scheduled. The command module Kitty Hawk splashed down safely in the Pacific Ocean at 4:05 p.m. EST Feb. 9, exactly nine days and two minutes after launch. The actual landing point was only 1.02 nautical miles off its targeted point of about 765 nautical miles south of Samoa, and four miles from the prime recovery ship, the USS New Orleans. The mission duration from liftoff to splashdown was 216 hours, two minutes.

=====

## **Today's Thang**

### **Whistling Duck Thang**

By Francie Troy



At an early age we learn to whistle  
It provides a defense, passive and civil.  
An invitation for friendly attention  
And sometimes effective in breaking up tension.  
When we are happy it's easy to sing  
We make a joyful noise  
And church bells ring.  
But when our hearts are heavy  
On a really bad day  
Sometimes a whistle is all we can say!  
There's something about whistling  
That boosts the spirit. We don't have to fear it.

-----

### **Francie explains the makeup of her Thangs:**

*I began making Thangs about ten years ago - the core is aluminum foil, compressed (by hand) and hammered into a shape. I wrap (tightly) the bulk with duct tape - a mummy!*

*I cut up pieces of packing material (popularly called popcorn) and glue it to the duct tape, creating the shape I am seeking - duck, boobie, rabbit, etc. This is a repeated process - more wrapping of duct tape - adding wire to attach legs or wings or head. More glue - more duct tape - more packing materials. I tear apart artificial flowers and make wings, feathers, etc. Several coats of acrylic - costume jewelry - dental floss (clean!!!) - buttons -*

*Thus - I have a Thang - but - as so often happens, so what!!!! So I began to write verse to go with the Thang. Then more so What!!! I take a picture of the Thang - transfer to my computer - make a card with Thang on front - and add the verse inside -*

*All this just sort of evolved - imagination plus energy equals creativity - and that's how I share Me with others!*

=====

## **The Perfect Wedding Gift**

<https://www.youtube.com/watch?v=BAU0dsQ1IB4>

Open the video to see what the groom arranged for the occasion.



=====

## **How Heart Health Can Keep Your Portfolio Beating**

By Dorothy Neufeld

[Heart Health and investing; Visualizing the Big Business of Heart Health](#)

Heart health affects almost one out of every two Americans, creating implications on both personal and economic levels. At the same time, this means that there is an opportunity for investors to get behind heart-health innovations and holistic solutions.

In this infographic from New York Life Investments, we explore this growing ecosystem and how it can benefit both the future of health and your portfolio.

[Why Invest in Heart Health?](#)

Each day, the heart beats 100,000 times—equal to a staggering 3.5 billion beats in a lifetime.

However, this crucial organ is affected by many ailments. Heart disease tops the list as the number one killer among Americans: 650,000 people in the U.S. die of heart disease annually.

In response, multiple industries from Big Tech to wellness are actively working on heart health solutions. By 2030, the cardiovascular disease tech market is projected to reach \$40B, making it a growing market for investors to dive into.



Below, we explore some case studies of companies that are aligned with healthy hearts and preventative solutions.

### The Fight to Detect Heart Disease

Irregular heartbeats are a key symptom of stroke and hospitalization. In fact, the most common and costly reason for preventable hospital stays is heart failure:

- 1.1M hospital stays annually
- \$11.2B total annual costs

To combat this, Apple and Stanford Medicine launched the Heart Health Study to develop an algorithm that detects irregular activity.

### How the Apple Heart Study app worked

Participants wore Apple Watches that detected irregular heart rhythms, known as atrial fibrillation

2,161 (0.52%) were notified of irregular heart rhythms, prompted to schedule a telehealth consultation, and were sent ECG patches to wear for a week

Of these notified participants...

- 34% Experienced atrial fibrillation
- 76% Sought medical attention

Along with the algorithm's 84% positive predictive value, the Apple Heart Health study promoted higher engagement with health services and telehealth providers. Heart health is big business, and Big Tech is only getting started.

### Innovating the Tools for Living

Type 2 diabetes is another major risk factor for heart disease. To help fight against diabetes, Fitbit is at the intersection of heart health and technology with glucose monitoring.

Among the projects it has under development:

- \$6 million investment in Sano, a company developing a coin-sized patch for glucose tracking
- Partnering with Dexcom to monitor how physical activity influences diabetes in a pilot program

While it's clear that preventative tools are critical on an individual level, their impact on a community-wide scale is striking. For example, *for every \$1 invested in bike and walking trails, almost \$3 in health costs are prevented.*

### Reversing the Trend: Why It's a Good Move

A key part of preventing heart failure is to get moving—both before and after critical issues arise.

Importantly, activewear has become one of the top performing categories in fashion since quarantine took hold. As a leader in activewear, Lululemon is designing smart clothing with innovative and lightweight materials.

Another avenue they have ventured into is home fitness, with its acquisition of *Mirror* in July, 2020 for \$500 million. Health and wellness have boomed in the age of COVID-19, and Lululemon's shares have climbed significantly:

Price Return (2020)

- LULU: 49.6%
- S&P 500: 16.3%
- DJIA: 7.3%

It's clear that activewear is deeply interwoven into consumer demand.

### The Future of Life-Saving Strategies

The problem with heart disease is that the related costs are only intensifying.

By 2035, the direct medical costs linked to cardiovascular disease are estimated to top \$748 billion, while indirect costs are projected to reach \$368 billion.

But this also means that there's a promising area of investment opportunity—with the potential for life-changing impact. As societies are hit with the twin threats of COVID-19 and aging populations, the demand for integrative heart solutions is more urgent than ever.

=====

## **Poetry for Today**

### **The Once and always Dr. Seuss**



How many kids honed their reading and listening skills with Dr. Seuss' hypnotic appeal to reverie?

The American children's author, political cartoonist, illustrator, poet, animator, and filmmaker, Theodor Seuss "Ted" Geisel, is known for his work writing and illustrating more than 60 books under the pen name Dr. Seuss.

He published his first children's book *And to Think That I Saw It on Mulberry Street* [a staple in my romper room days and later as a witness to my children's enthusiastic pleasures] in 1937. During World War II, he took a brief hiatus from children's literature to illustrate political cartoons, and he also worked in the animation and film department of the United States Army where he wrote, produced or animated many productions.

After the war, Geisel returned to writing children's books, writing classics like *If I Ran the Zoo* (1950), *Horton Hears a Who!* (1955), *If I Ran the Circus* (1956), *The Cat in the Hat* (1957), *How the Grinch Stole Christmas!* (1957), and *Green Eggs and Ham* (1960). He published over 60 books during his career, which have spawned numerous adaptations, including 11 television specials, five feature films, a Broadway musical, and four television series.

---

## **Oh, The Places You'll Go**

Congratulations!

Today is your day.  
You're off to Great Places!  
You're off and away!

You have brains in your head.  
You have feet in your shoes.  
You can steer yourself  
any direction you choose.  
You're on your own. And you know what you know.  
And YOU are the guy who'll decide where to go.  
You'll look up and down streets. Look 'em over with care.  
About some you will say, 'I don't choose to go there.'  
With your head full of brains and your shoes full of feet,

you're too smart to go down any not-so-good street.

And you may not find any  
you'll want to go down.  
In that case, of course,  
you'll head straight out of town.  
It's opener there  
in the wide open air.  
Out there things can happen  
and frequently do  
to people as brainy  
and footsy as you.  
And then things start to happen,  
don't worry. Don't stew.  
Just go right along.  
You'll start happening too.

OH!  
THE PLACES YOU'LL GO!

You'll be on your way up!  
You'll be seeing great sights!  
You'll join the high fliers  
who soar to high heights.

You won't lag behind, because you'll have the speed.  
You'll pass the whole gang and you'll soon take the lead.  
Wherever you fly, you'll be best of the best.  
Wherever you go, you will top all the rest.

Except when you don't.  
Because, sometimes, you won't.

I'm sorry to say so  
but, sadly, it's true  
that Bang-ups  
and Hang-ups  
can happen to you.

You can get all hung up  
in a prickly perch.  
And your gang will fly on.  
You'll be left in a Lurch.



You'll come down from the Lurch  
with an unpleasant bump.  
And the chances are, then,  
that you'll be in a Slump.

And when you're in a Slump,  
you're not in for much fun.  
Un-slumping yourself  
is not easily done.  
You will come to a place where the streets are not marked.  
Some windows are lighted. But mostly they're darked.  
A place you could sprain both your elbow and chin!  
Do you dare to stay out? Do you dare to go in?  
How much can you lose? How much can you win?

And IF you go in, should you turn left or right...  
or right-and-three-quarters? Or, maybe, not quite?  
Or go around back and sneak in from behind?  
Simple it's not, I'm afraid you will find,  
for a mind-maker-upper to make up his mind.

You can get so confused  
that you'll start in to race  
down long wiggled roads at a break-necking pace  
and grind on for miles cross weirdish wild space,  
headed, I fear, toward a most useless place.  
The Waiting Place...

...for people just waiting.  
Waiting for a train to go  
or a bus to come, or a plane to go  
or the mail to come, or the rain to go  
or the phone to ring, or the snow to snow  
or the waiting around for a Yes or No  
or waiting for their hair to grow.  
Everyone is just waiting.

Waiting for the fish to bite  
or waiting for the wind to fly a kite  
or waiting around for Friday night  
or waiting, perhaps, for their Uncle Jake  
or a pot to boil, or a Better Break  
or a string of pearls, or a pair of pants  
or a wig with curls, or Another Chance.

Everyone is just waiting.

NO!

That's not for you!

Somehow you'll escape  
all that waiting and staying  
You'll find the bright places  
where Boom Bands are playing.

With banner flip-flapping,  
once more you'll ride high!  
Ready for anything under the sky.  
Ready because you're that kind of a guy!

Oh, the places you'll go! There is fun to be done!  
There are points to be scored. There are games to be won.  
And the magical things you can do with that ball  
will make you the winning-est winner of all.  
Fame! You'll be as famous as famous can be,  
with the whole wide world watching you win on TV.

Except when they don't  
Because, sometimes they won't.

I'm afraid that some times  
you'll play lonely games too.  
Games you can't win  
'cause you'll play against you.

All Alone!  
Whether you like it or not,  
Alone will be something  
you'll be quite a lot.

And when you're alone, there's a very good chance  
you'll meet things that scare you right out of your pants.  
There are some, down the road between hither and yon,  
that can scare you so much you won't want to go on.

But on you will go  
though the weather be foul.  
On you will go  
though your enemies prow!

On you will go  
though the Hakken-Kraks howl.  
Onward up many  
a frightening creek,  
though your arms may get sore  
and your sneakers may leak.

On and on you will hike,  
And I know you'll hike far  
and face up to your problems  
whatever they are.

You'll get mixed up, of course,  
as you already know.  
You'll get mixed up  
with many strange birds as you go.  
So be sure when you step.  
Step with care and great tact  
and remember that Life's  
a Great Balancing Act.  
Just never forget to be dexterous and deft.  
And never mix up your right foot with your left.

And will you succeed?  
Yes! You will, indeed!  
(98 and 3/4 percent guaranteed.)

KID, YOU'LL MOVE MOUNTAINS!

So...  
be your name Buxbaum or Bixby or Bray or Mordecai Ali Van Allen O'Shea,  
You're off the Great Places!  
Today is your day!  
Your mountain is waiting.  
So...get on your way!

-----  
Dr. Seuss Beginner Book Video Green Eggs and Ham

<https://www.youtube.com/watch?v=4xbgmrVGH>

=====  
**Carl Phillip Emmanuel Bach**



Commonly abbreviated C. P. E., this Bach was the fifth child of Johann Sebastian Bach and Maria Barbara Bach.

In transiting the shift from Baroque to Classical forms in music, CPE—the London Bach as he has come to be known—faced nearly insurmountable challenges in forging a music career comparable to that of his illustrious father, but time has been good to him as his symphonies, Concertos, keyboard sonatas, and chamber music pieces, are finding their way into mainstream performances with increasing regularity.

While few would argue the compendium of his works rivalled his papa's, they showed the brilliance that set him above many of the more notable composers of his era.



*This painting by Adolph von Menzel depicts Frederick the Great playing the flute as C. P. E. Bach accompanies on the keyboard.*

My favorites

Cello Concerto in A Minor Wq. 170; William Skeen, Voices of Music  
<https://www.youtube.com/watch?v=j3YdRHocF4w>

Württemberg Sonatas Sonata in B minor  
<https://www.youtube.com/watch?v=uv1J9SFcSKg>

**Rondo' Wq66** (Guitar transcription by Nicola Jappelli)  
<https://www.youtube.com/watch?v=m70OCkrcFJE>

Rondo in c minor Wq 59/4, Karpińska – fortepiano  
<https://www.youtube.com/watch?v=ucwrn9qT5jk>

Magnificat - Wq215 (1749) - performed on period instruments by Monteverdichor  
Würzburg, Monteverdi Ensemble, Matthias Beckert (cond.)  
<https://www.youtube.com/watch?v=MIKelsO0G80>

=====



=====

## Duxford Airshow 2014



<http://player.vimeo.com/video/93587997>

Duxford 2020 was cancelled. Will we ever see such a gathering of warbirds as this again? I surely hope so.

2021 is scheduled for July. Keep your fingers crossed.

=====

## **AB Normals Just Havin' a Little Fun**



<https://www.youtube.com/watch?v=eTmKOGdvI1A>

Will there's a will there's a way.

=====

## **Shimmering Art for a Quiet Sunday**

### **Ginko Leaves**



Barbara Medaille; Oil

=====

### **What Do You Do with Old Bumper Cars?**

Remember driving the bumper cars at amusement parks or A fair, don't you? They were so much fun.....



Yes, you read that right; these little beasts are street legal.

They run on either Kawasaki or Honda motorcycle engines and co-opt vintage bumper car bodies into the most awesome form of mini-car we've seen in too long. There are seven of these little monsters floating around California and they're all the creation of one man, Tom Wright, a builder in the outskirts of San Diego who figured the leftovers of the Long Beach Pike amusement park needed a more dignified end than the trash heap.

They were originally powered by two cylinder Harley Davidson Motorcycle engines but they rattled like heck because of the two cylinder vibration and Tom replaces them with four cylinder Honda or Kawasaki 750's and a couple have been measured as capable of 160 MPH, which is terrifyingly fast in machines with such a short wheelbase.



By the way, the cars are almost Indestructible in accidents!

=====

## Care for a 155 MPH Roller Coaster Ride?

Karla Cripps, CNN





*A rendering of Six Flags Qiddiya, due to open in Saudi Arabia in 2023.*

(CNN) — A roller coaster now under development in the Middle East is set to smash existing records for speed, height and track length.

Called "Falcon's Flight," the ride will be the main attraction of Six Flags Qiddiya, due to open in Saudi Arabia outside of capital Riyadh in 2023.

According to a press release issued by the Qiddiya Investment Company, which has partnered with US-headquartered Six Flags to build the park, the coaster will travel across four kilometers (about 2.5 miles) of track.

[https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG\\_ROLLERCOASTER\\_1.mp4](https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG_ROLLERCOASTER_1.mp4)

Riders will experience the thrill of diving over a vertical cliff into a 160-meter-deep valley (525 feet) thanks to the use of magnetic motor acceleration (LSM technology), and "achieve unprecedented speeds of 250-plus km/h" -- about 155 miles per hour.

"The Falcon's Flight will also be the world's tallest free-standing coaster structure, featuring a parabolic airtime hill allowing a weightlessness airtime experience," says the release.

[https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG\\_ROLLERCOASTER\\_2.mp4](https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG_ROLLERCOASTER_2.mp4)

It will take up to 20 passengers on a three-minute long ride that and offers panoramic views of Six Flags Qiddiya. If the video rendering produced by Qiddiya is an accurate depiction of what guests will experience, this one's only for true thrill seekers.

As for the park, Six Flags Qiddiya will feature 28 rides and attractions across six themed lands: The City of Thrills; Discovery Springs; Steam Town; Twilight Gardens; Valley of Fortune; and Grand Exposition.

Appropriately, the Falcon's Flight will be part of the City of Thrills, along with Sirocco Tower, which will be the world's tallest drop-tower ride.

Construction on the park, located about 40 minutes from Riyadh, kicked off in 2018.

[https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG\\_ROLLERCOASTER\\_3.mp4](https://cdn.cnn.com/cnn/.e/interactive/html5-video-media/2021/02/03/WEBTAG_ROLLERCOASTER_3.mp4)

### **Current record holders**

The Falcon's Flight is being designed by Intamin. Headquartered in Liechtenstein, it's been creating theme park attractions for over 50 years and is behind many of the world's most famous rides.

That includes the current holder of the world's fastest roller coaster title -- the Formula Rossa, at Ferrari World Abu Dhabi in the United Arab Emirates. It travels at speeds of up to 240 kilometers (149 miles) per hour.

The current world's tallest coaster made of steel -- yet another Intamin project -- can be found in New Jersey. Kingda Ka, at Six Flags Great Adventure, stands 139 meters (456 feet).

And finally, the longest roller coaster on the planet right now is the Steel Dragon 2000. Developed by D. H. Morgan Manufacturing, it can be found inside Japan's Nagashima Spa Land amusement park in Nagashima, Kuwana.

According to the Guinness Book of World Records, it spans 2.48 kilometers (1.54 miles).

=====

### **Musk to Build CA Airport Tunnel**



*Musk's Tunnel Boring Machine*  
*Trenchless.com*

Elon Musk and San Bernardino County's transportation agency began exclusive negotiations this week on construction of an underground people-mover from the Metrolink train station in Rancho Cucamonga to Ontario International Airport. If the project moves forward, operation could begin in late 2023 or early 2024.

According to SGVT Tribune, riders would get in a Tesla Model 3s or a specially designed 12-passenger Tesla tram and travel up to 127 mph on a track for the short, 4-mile trip. The vehicles are electric and produce zero emissions.

Three above-ground stations would be built: one near the existing Metrolink commuter rail station, and two at the airport—at Terminal 2 and Terminal 4. A one-way ride would take about five minutes, according to the SBCTA. The loop would carry about 1,200 people per day, or 10 million-plus per year.

The cost for the project during early discussions in 2019 started at \$45 million but the proposal submitted to SBCTA by the Boring Co. in December placed the cost at \$85 million. This would be the first rail-like connection at Ontario airport, and would lessen congestion from single-passenger cars using the 10 Freeway.

The Loop would cost considerably less than the stalled \$1- to \$1.5-billion light-rail extension of the Gold Line (now known as the L Line) from Pomona to the airport, and could be built in two or three years rather than the 10 years it would take to extend the light-rail, according to the SBCTA.

Source: SGVT Tribune

*[I can hardly wait to see how many roadblocks concerned politicians will come up with.]*

=====

## **Game Changers**

## Dream Chaser Space Runs into COVID-19 Headwind

By Nola Taylor Redd



*Dream Chaser is capable of touching down on any runway that can welcome a Boeing 737.  
(Image: © Sierra Nevada Corp.)*

Delays related to the ongoing coronavirus pandemic have pushed back the anticipated flight date of Sierra Nevada's Dream Chaser space plane to 2022.

Dream Chaser is one of the NASA-selected cargo vehicles that, once it begins to fly, will resupply the International Space Station (ISS), along with SpaceX's Dragon and Northrop Grumman's Cygnus capsules. But even as the space plane's launch is delayed, its parent company continues to aim towards sending humans to the moon and, eventually, Mars.

"We've got this vision of the future here with our technology that we're already creating," Neeraj Gupta, director of programs for Sierra Nevada Corporation's Advanced Development Group, said during a November press conference. "What we really see is this kind of vibrant, bustling commercial space economy developing."

In pictures: Sierra Nevada's Dream Chaser aces glide test flight

<https://www.youtube.com/watch?v=4b3BN4O3a>

<https://www.youtube.com/watch?v=pnmyRbWNDkc>

<https://www.youtube.com/watch?v=VbqD4UNO-VQ>

<https://www.youtube.com/watch?v=rqdmпуwOw7g>

Dream Chaser is a cornerstone of that vision, Gupta said. Another key element is the Large Inflatable Fabric Environment (LIFE) habitat, a three-story structure capable of housing explorers on the moon or Mars for up to 90 days.

Dream Chaser was supposed to make its first of six flights transporting cargo for NASA to and from the ISS late this year. But during the briefing, Sierra Nevada said delays have pushed the launch back to 2022.

"This has been a trying year with the COVID restrictions and quarantines," Steve Lindsey, senior vice president for strategy at Sierra Nevada Corporation Space Systems, said at the same event. Pandemic conditions have forced the company, like many others, to seek out creative solutions to continue meeting deadlines.

"We're going to keep fighting through the COVID challenges, get this thing built, and we're going to get it flown as soon as we can do so safely," Lindsey said.

Looking for an end to end solution that will increase efficiency and growth within your hauling...

Sierra Nevada has not announced when in 2022 Dream Chaser will attempt to make its first flight, but Lindsey described how pandemic restrictions prevented engineers from being on site for structural testing of the cargo model. Instead, engineers remotely oversaw the tests from a mission control center in Colorado. While the workaround allowed testing to continue, it took three or four times as long as it should have, Lindsey said.

Other delays came from supplier shutdowns due to COVID-19 outbreaks. Technical challenges not related to the pandemic also caused problems, though Lindsey did not elaborate. "All of those things have conspired to move the date a little bit," Lindsey said.

### **Chasing dreams**

Dream Chaser is designed to make trips into space more accessible by landing on any runway that can welcome a Boeing 737 aircraft. The reusable spacecraft is also fairly

modular, allowing it to accommodate a wide range of cargo that would be easily accessible soon after landing.

Sierra Nevada currently holds a NASA contract for a minimum of six missions to the ISS, and those missions are the primary push for the Dream Chaser team right now, Lindsey said. But the space plane was designed to be far more accommodating.

"When you're going to do something commercial like we're trying to do, you have to take the long view, and that starts with your design," Lindsey said.

Although the company remains committed to the ISS, they are also searching for other potential customers. "We believe that the market demand is out there," Lindsey said. The company's biggest success on that path to date is the United Nations, which in 2019 announced its plan to allow Dream Chaser to carry experiments from member countries, planned for 2024.

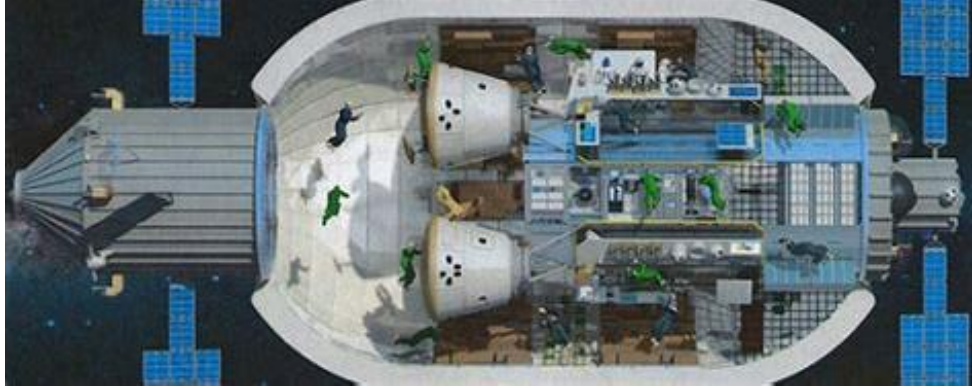


*Artist's illustration of Sierra Nevada's Dream Chaser space plane in orbit.  
(Image credit: Sierra Nevada Corp.)*

While the first Dream Chaser plane, named Tenacity, is currently moving towards its final stages, a second vehicle is also currently in production, Lindsey said. Both vehicles are built to endure 15 missions.

The company is also considering a crewed version of Dream Chaser, although it does not yet have a contract for such a vehicle. A crewed ship would be very similar to the cargo plane, with seating and life support added, as well as an abort system, which would allow astronauts to quickly and safely escape during an emergency.

And a human-ready version remains an important part of the Dream Chaser vision, Lindsey said. "We will never lose our drive to eventually make this vehicle crewed," he said.



*A 'skyscraper for space'*

<https://www.youtube.com/watch?v=ANfC6o0urOA>

Even as Sierra Nevada faces delays with Dream Chaser, it continues to press on toward creating a space environment. The LIFE habitation, originally one of five concepts considered by NASA for its Artemis program architecture, is an inflatable living structure that can be used in orbit or on the surface of a moon or planet.

"It's basically a skyscraper for space," Gupta said.

The inflatable habitat starts out compact enough to fit inside an 18-foot (5.40 meter) rocket fairing, eventually expanding to a 27 by 27 foot (8 by 8 m) fabric building.

"We can launch this on a commercially available launch vehicle today," Gupta said.

The habitat extends the amount of time humans can stay on the surface of the moon, to at least 90 days, and potentially longer.

"The first step is getting people there, the first woman and next man to the surface of the moon," Gupta said. "But the next piece is staying there."

But while the outpost is currently aiming for the moon, Mars remains in its sights. Gupta said the habitat's ability to expand from a small package is a plus for long journeys to the Red Planet, when space will be at a premium.

=====