

Forbes

MONACO



**MONACO
CASINO
IN SPACE**

MONTE CARLO'S
NEW
NEIGHBORHOOD
FOR ULTRA-RICH

SHIRLEY BASSEY
LICENSED
TO THRILL

WHISKY'S
"WELL-KEPT
SECRET"

YOUTUBE
RICHEST
7-YEAR-OLD

CHIEF NAVIGATOR SIR STELIOS HAJI-IOANNOU

THE MAN BEHIND EASYJET
AND MONACO'S GIVING PLEDGE

FEBRUARY/MARCH 2019

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Jet-Set Jetsons

Monegasques love their boats. Polo is nice, too—and Formula One can be pretty exciting. But the latest ride for thrill-seekers is out of this world.

BY NANCY HESLIN

PHOTOGRAPHY COURTESY OF AXMINSTATION



Mike Suffredini (left) had "fun" working with designer Philippe Starck: "This is what our company is all about. We work with the best of the best to put our station together."

deal is to collaborate in training one or more Monaco citizens or residents as private astronauts to send to Low Earth Orbit by the end of 2020, which would make Monaco the 19th sovereign nation to send an astronaut to the International Space Station (ISS). The entire round-trip excursion would take an estimated 10 days, including a week or more in orbit.

"Axiom's unique ability to build indigenous astronaut selection and training capability to NASA standards will accelerate the development of Monaco's plans for human spaceflight and space research," Axiom Space CEO Michael T. Suffredini, 60, said at the time. The company, he added, looks "forward to Monaco joining the human spaceflight community and substantial progress toward Axiom's vision of making living and working in space commonplace."

For the Principality, it was the climax to an already stellar event among whose invitees were eight legendary astronauts, including Buzz Aldrin, the second man to set foot on the moon, and Captain Michael López-Alegria, American space-walk record holder and veteran of three Space Shuttle missions and one ISS mission.

When it comes to bragging rights, the super-rich don't think twice about splashing out to own, say, the world's largest mega-yacht—the 180-meter *Azzam* which, at \$600 million, is more than the entire cost of One Monte-Carlo, Monaco's new luxury residential district (see p. 30). But ego trips are about to rocket to a whole new stratosphere, at an altitude of 250 miles from earth to be exact, and Monaco, with a reputation for wealth and extravagance, is leading the pack of new cosmonauts.

In November, during a week-long celebration in Monaco to mark the 60th anniversary of NASA, a memorandum of understanding was signed between Texas-based Axiom Space and Space Systems International-Monaco S.A.M (SSI-Monaco). The



LOW EARTH ORBIT VS. EDGE OF SPACE

From 2020, Axiom missions will offer space tourists a chance to live in orbit over a continuous 7 or 8 days at an altitude of 250 miles from earth. According to Suffredini, "Fifty percent of folks are a little queasy in the first few days in orbit and then they acclimate and can absorb the mission." At 51.6 degrees inclination, they'll see the entire planet "not once but twice."

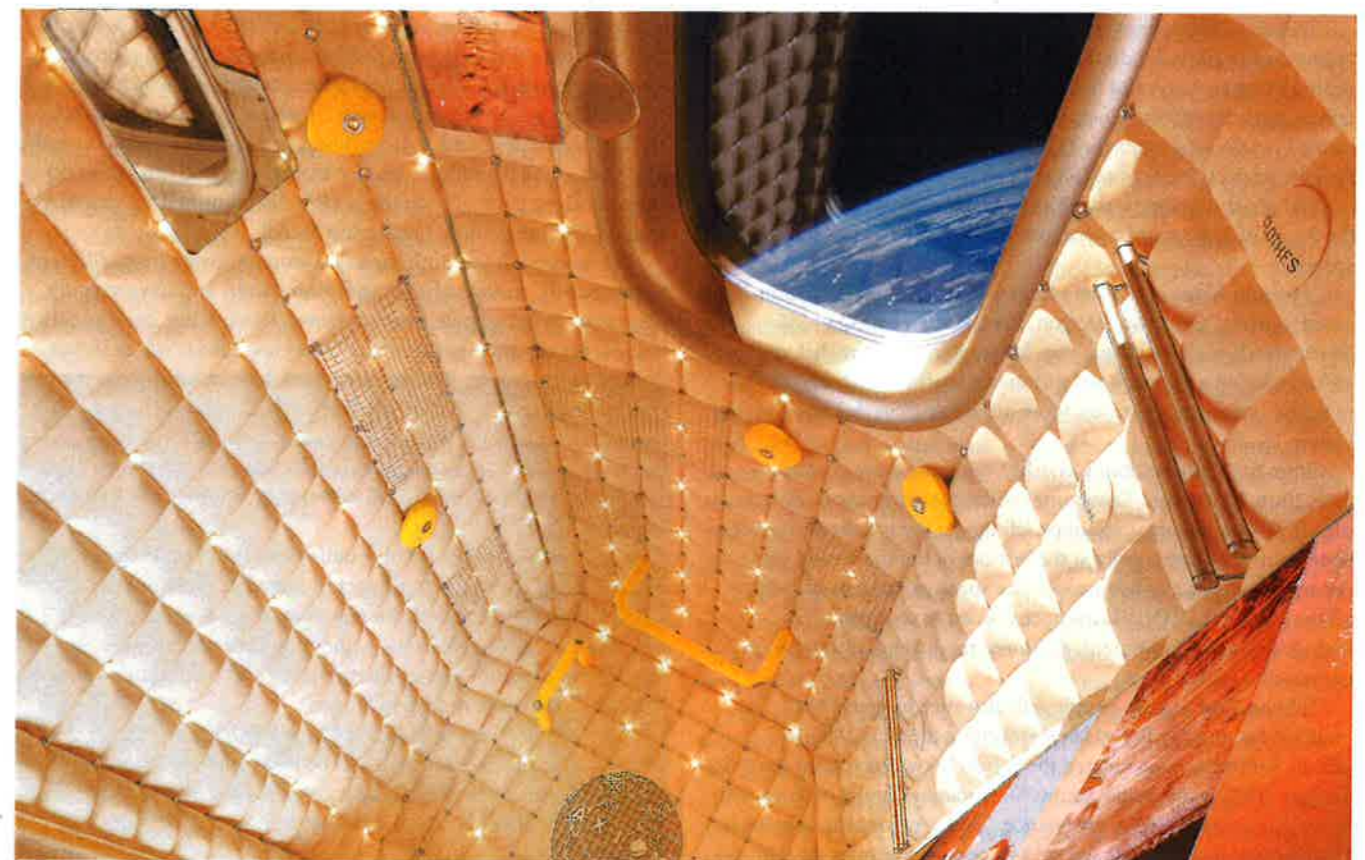
Missions can range from STEM education outreach to microgravity and biological research, and from film-making to photography projects.

Price tag: \$55 million

Richard Branson's Virgin Galactic, "the world's first commercial spaceline," anticipates sending paying tourists to space this year for a 90-minute suborbital trip. The airfare includes four minutes floating in zero gravity, observing earth—and getting "home in time for dinner." He's facing competition from Amazon CEO Jeff Bezos' space company Blue Origin, which is currently testing crew flights aboard its New Shepard space vehicle.

Flying to the edge of space gives travelers a momentary glimpse at black space and some five minutes of microgravity before returning. Spaceships won't gain enough energy to get to orbit and don't have capability to withstand the heat of reentry.

Price tag: \$200,000-\$300,000



Philippe Starck designed each of the Axiom crew quarters as "foetal interiors" with egg-shaped suede-textured walls, 20-inch windows and "awesome" nano LED lights that change color depending on where the space station is travelling in relation to earth. Feature photo: A giant cupola will act as an earth observatory.



Mike Suffredini at NASA's John F. Kennedy Space Center during shuttle launch.

the candidates must be able to fund some of the expedition, which includes continuous 7 to 10 days in microgravity orbiting at 17,000mph.

"What's unique about Monaco is that they are looking at opportunities for individual residents or citizens to fly to space representing Monaco, not necessarily as professional astronauts, and in concert with the government," explains Suffredini, who trained NASA astronauts for flight before he worked his way up to become project manager of ISS at the Johnson Space Center.

"What's also unique is that Monaco would like to play a role in the future of space travel, more specifically, to provide a hotel in space."

"Monaco is one of the top places in the world for interest in space tourism," Dr. İlhami Aygun, President and CEO of SSI-MonacoSAT, shares with me. "So, in our agreement with Axiom, we've included a plan to have a Monaco-specific habitable module in space, but more luxurious, more attractive than the actual space station."

From the Philippe Starck lavishly-designed crew quarters—with 20-inch windows, "awesome" color-changing nano LEDs and ultrahigh-quality music soundproofing—to the independent earth observatory, a giant cupola at the bottom of the space ship that can accommodate four or five people, the space experience provides all the comforts UHNWIs are accustomed to on earth. This includes exercise equipment, a tailored menu, and, of course, a cappuccino maker.

"I know how to keep people well and alive in space, but I couldn't design a comfortable environment for an individual," admits Suffredini, who created the privately-owned Axiom Space in January 2015, which today counts 60 employees, most of them with varying degrees of NASA experience. "It's been fantastic to bring in Philippe and it shows that Axiom as a company is working with the

best of the best, not necessarily just space nerds."

In fact, it could be big business. A study by Axiom Space estimates the various commercial and governmental uses could bring in as much as \$37 billion between 2020 and 2030. In 2024, when the ISS (whose first long-term residents arrived in 2000) retires, the Axiom International Commercial Space Station will detach from it.

"It's a normal reaction that space travel is for the super-rich to 'fly for the fun of it,' and at \$55 million, only individuals who would part with about 5% of their readily available capital can," remarks Suffredini, recipient of both the NASA Distinguished Service Medal and NASA Outstanding Leadership Medal.

While candidates, both men and women, come from different backgrounds, a range of ages and professions, and have varying objectives to participate in space travel, there is one commonality that eventually defines them: the Overview Effect, which writer Frank White used in 1987 to illustrate "the mental shift astronauts experience when they consider the earth as part of a larger whole." In fact, as ISS program manager from 2005 to 2015, Suffredini talked to every individual he sent to orbit before they flew and after they landed, and without exception, they had each experienced this.

"They see this beautiful blue ball with a thin fragile atmosphere around it and they want to protect it; they don't see borders, cultures or dogma but rather a planet we share together," he articulates. "They come home wondering how we can work together to make the planet a better place and help it survive—and thus we as a species survive—longer."

And with the luxury of WiFi in Low Earth Orbit, the development of space tourism will be wide open—even to the point of adding some local Monegasque color. As Dr. Aygun comments with a grin, "Why not a link with the casino for online gaming from the space station?" ❀

Monaco's Space Odyssey

THE RECENTLY ANNOUNCED deal with Axiom Space to send a Monaco resident or citizen into Low Earth Orbit by 2020 is the result of an idea brought to the table by Maguy Maccario Doyle, Ambassador Extraordinary and Plenipotentiary of the Principality of Monaco to the United States and Canada.

Two years ago, Ambassador Doyle approached Dr. İlhami Aygun, president and CEO of SSI-MonacoSAT to make the film, *Above and Beyond: NASA's Journey to Tomorrow*, which was shown in Monaco to mark the space agency's 60th anniversary. This led to Aygun meeting Captain Michael López-Alegria, the space-walk record holder and veteran of three Space Shuttle missions and one ISS mission, who is also responsible for business development at Axiom Space.

An electrical/electronics engineer from Middle East Technical University-Ankara, Aygun became director

of the Turkish Satellite Communications Center in Turkey in 1985; he was the youngest person the country had ever appointed. "The government had to issue a decree to allow me to take this top position. By the end of the 1990s, Turkey was the biggest satellite user in Europe."

When the position of project manager was offered in 1991 for Aerospatiale-France—the aerospace manufacturer which in 2000 became Thales Alenia Space—Aygun moved his family to Cannes, where 50% of the world's satellites are manufactured.

By 1997, the satellite designer moved into the position of director general and CEO of EurasiaSat, which received assistance from the Monaco government to find an office in the Principality and to create the company, an international joint project—French, Turkish and Monegasque.

"The capital of the company



Launch of MonacoSAT satellite from Cape Canaveral on April 27, 2015.



Pictured with Prince Albert, Dr. İlhami Aygun, President and CEO of SSI-MonacoSAT says, "It's thanks to the interest of Prince Albert that I was able to create a space industry for Monaco."

at that time was €80 million, and our total project was €300 million," Aygun recalls from his vibrantly decorated office in the Gildo Pastor Center in Fontvieille.

In 2004, Dr. Aygun, who has postgraduate and doctorate degrees from Southampton University, AT&T Bell Labs/MIT and Marmara University in Istanbul, set up SSI-Monaco, the satellite operator of the Principality of Monaco, and the joint telecommunications satellite project—MonacoSAT.

Monaco first applied for a coveted orbital position in 2005—there are an increasingly limited number of orbital slots available—but was only able to complete coordination in 2008. "We started negotiations in 2009 with SSI, and a year later signed an agreement with the Monaco government to have the right to use 52° East orbital position.

"We spent two years and millions to coordinate and register this orbital position on behalf of the Monaco state."

On April 27, 2015, the company launched the TurkmenAlem52E/MonacoSAT satellite in partnership with Thales Alenia Space from Cape Canaveral

with Falcon 9 of SpaceX.

The capacity of the satellite was then leased to the outside world—CNN, the BBC and TV telecom companies. As there was no international TV channel in Monaco, "we decided to create one."

The SSI Media branch will be headed by film and television producer Christian Moore (son of the late Bond actor Roger Moore, who was a long-time Monaco figure). Moore has also launched SuperyachtTV, and other themes are "in the pipeline," including channels for the environment.

"When we started MonSat1, our intention was to lease two-thirds of the capacity," elaborates Dr. Aygun. "We came to an agreement to put the remaining one-third of MonacoSAT in the fleet of SES, previously called Astra, the biggest satellite operator in the world with 54 satellites.

"This means that SES is commercializing our capacity. Already our satellite, due to its 52° East position and award-winning design, reaches 1.9 billion people who live within the coverage area."

The little principality of 38,000 is already punching well above its weight. ❀