

Citizen Releases New Watch Model in Collaboration with the HAKUTO-R Lunar Exploration Program

Tokyo, Japan, June 16 – ispace, inc. (“ispace”), a lunar exploration company headquartered in Japan, and Citizen Watch Co., Ltd. (“Citizen”) are pleased to announce that Citizen will release two limited-edition watches in collaboration with the HAKUTO-R program, a commercial lunar exploration program consisting of ispace’s first two missions.

Citizen became a Corporate Partner of the HAKUTO-R program in August 2019¹ and has supplied ispace with processed titanium material to be used in the legs of its HAKUTO-R lunar lander. The material supplied by Citizen, which is called Super Titanium™,² has been used in the testing models of the HAKUTO-R lander and is planned to be used in the flight model, which is scheduled to land on the lunar surface during Mission 1 of the program in 2022.³ From the perspective of mass reduction and durability, ispace aims to improve the reliability and environmental resistance of the lander using Citizen’s Super Titanium™ material.



CITIZEN HAKUTO-R Collaboration Models

Left: Eco-Drive⁴ GPS SATELLITE WAVE F950 Double Direct Flight – Limited edition of 1,200 units worldwide

Right: Eco-Drive Radio-controlled Direct Flight – Limited edition of 1,600 units worldwide

Super Titanium™ is lightweight, scratch- and corrosion-resistant, and has a surface hardness of 1,000Hv, while maintaining the lightness of titanium. It is also developed using Citizen’s proprietary technology called Duratect⁵ that employs special treatment techniques—including ion plating, cold plasma, gas hardening and duplex coating—to improve the surface hardness of the titanium material.

¹ [Citizen Watch Becomes Corporate Partner of ispace’s HAKUTO-R Program](#); 22 Aug, 2019

² Super Titanium™ is CITIZEN’s proprietary technology to treat solid titanium with surface hardening technology. It is at least 5 times harder than stainless steel, resistant to scratches, lightweight and gentle to the skin for comfortable wearing

³ Planned as of June 2021.

⁴ Eco-Drive is CITIZEN’s proprietary technology that powers watches using any natural or artificial light source, eliminating the need to replace batteries. Certified as an Eco Mark product for the first time in the watch industry.

⁵ Duratect is CITIZEN’s proprietary surface hardening technology that enhances the surface hardness of metals such as stainless steel and titanium, protecting watch bodies from scratches and damage. This technology offers excellent abrasion quality and maintains luster of metals for long periods of time. Duratect DLC achieves Vickers hardness of 1,000-1,400 by coating an amorphous carbon hard film—mainly composed of carbon and hydrogen—on the surface of the material. Duratect MRK and Duratect MRK Gold achieves Vickers hardness of 1,300-1,500 Hv by instilling gas onto the surfaces of titanium materials to harden.

Citizen's HAKUTO-R collaboration model watches also use Super Titanium™. The two watches convey the brightness and darkness of the Moon with Duratect MRK Gold representing the shimmering "Light of the Moon" and the glossy black finish of the Duratect DLC representing the "Dark of the Moon". The backs of the watches are engraved with the HAKUTO-R lander and logo to encourage people to seek inspiration from the commercial lunar exploration program.

Product Features

■ Light of the Moon – CC4016-75E

- Sophisticated gold-colored accents in Duratect MRK Gold contrasting with the deep black color of Duratect DLC to express the light and dark of the Moon.
- Mother-of-pearl provides a subtle sheen to the subdial at the six o'clock position, inspired by the shifting shadows of the Moon.
- HAKUTO-R lunar lander design on the case back.



■ Dark of the Moon – AT8185-71E

- An attractive deep black case and band using Super Titanium™ treated with Duratect DLC.
- The dial provides a sense of depth with a design inspired by the surface of the Moon accented by mother-of-pearl over a black printed background on the subdial at the six o'clock position.
- Glittering accents on the outer rim of the dial represent stars in outer space.
- HAKUTO-R logo engraved on the case back.



The HAKUTO-R collaboration model watches will be released by Citizen on July 8, 2021. For more details, please see the [Citizen Watch release](#) (Japanese website).

Comment

■ **Takeshi Hakamada, Founder & CEO, ispace:** "Our partnership with Citizen is representative of ispace's vision as a company and vision for the future of the lunar economy. Even though Citizen is from outside of the space sector, they identified a solution to apply their unique specialty to support ispace's lunar lander development. Now, with the HAKUTO-R collaboration model watches, Citizen is launching a unique product that aims to inspire the world about the future of our industry and the future of humanity, while making more people feel closer to space."



Above: ispace engineers conduct testing on the structure thermal model of the HAKUTO-R lunar lander.

■ Citizen Watch Co., Ltd. (<https://www.citizenwatch-global.com/index.html>)

CITIZEN WATCH is a true manufacture d'horlogerie with a comprehensive manufacturing process that extends from creating a watch's individual components to its final assembly. The company operates in more than 140 countries and regions around the world. Since its founding in 1918, CITIZEN have held the belief of "Better Starts Now" — that is, no matter who you are and what you do, it is always possible to make something better, and now is the time to start doing it. Sharing this belief, we have made watches, invented and improved technologies and explored the future of watches such as our proprietary light-powered Eco-Drive technology and state-of-the-art satellite-synchronized timekeeping.

■ About ispace, inc. (<https://ispace-inc.com/>)

ispace is a lunar exploration company with over 130 staff and offices in Japan, Europe, and the United States. Founded in 2010, ispace managed Team HAKUTO, one of the 5 finalists in the Google Lunar XPRIZE competition. The company is building a small commercial lunar lander, which aims to provide a high-frequency, low-cost delivery service to the Moon, as well as a lunar rover for surface exploration. Aspiring to be a gateway for the private sector to bring their business to the Moon, ispace has also launched a lunar data business concept to support companies with lunar market entry. ispace is part of a team led by Draper, which was selected by NASA to compete in its Commercial Lunar Payload Services (CLPS) Program, and ispace Europe was selected by ESA to be part of the Science Team for PROSPECT, a program which seeks to extract water on the Moon.

■ About HAKUTO-R (<https://ispace-inc.com/hakuto-r/>)

HAKUTO-R is a multinational commercial lunar exploration program operated by ispace. It includes ispace's first two lunar missions: Mission 1, a soft lunar landing planned to launch in 2022⁶, and Mission 2, a lunar landing and deployment of a rover planned to launch in 2023⁷. For both missions, the HAKUTO-R lander is planned to launch on SpaceX's Falcon 9 rocket. The program aspires to lay the groundwork for high-frequency lunar transportation. Corporate Partners of HAKUTO-R include Japan Airlines, Suzuki Motors, Citizen Watch, Mitsui Sumitomo Insurance, NGK Spark Plug, Takasago Thermal Engineering, Sumitomo Corporation, Sumitomo Mitsui Banking Corporation and SMBC Nikko Securities Inc. Media Partners for HAKUTO-R include TBS, Asahi Shimbun, and Shogakukan.

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⁶ Planned as of June 2021.

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