

SwRI ultraviolet instrument selected for ESA's JUICE mission to Jupiter's icy moons

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An ultraviolet spectrograph designed by Southwest Research Institute (SwRI) has been selected for flight on the European Space Agency's Jupiter Icy Moon Explorer (JUICE). NASA is funding development of the instrument, which will observe ultraviolet emissions from the Jovian system.

"The JUICE mission will let UVS get close-up views of Europa, Ganymede and Callisto," says Dr. Randy Gladstone, principal investigator of the UVS (ultraviolet spectrograph) and an Institute scientist in SwRI's Space Science and Engineering Division. "We expect these data will tell us about the composition of the surfaces and the tenuous atmospheres of the Galilean moons, and how they interact with Jupiter and its giant magnetosphere."

Along with UVS, JUICE will carry 10 complementary instruments designed to make detailed observations of the giant [gas planet](#) Jupiter and its three largest moons, Ganymede, Europa and Callisto. These moons are believed to host bodies of liquid water beneath their icy surfaces. JUICE observations could provide insight to the moons' potential for supporting life during future [manned missions](#). The instruments will also map the moons' surfaces, sound their interiors and determine the potential for life in their oceans.

"JUICE-UVS data will complement data from NASA's [Juno mission](#) by determining the composition of Jupiter's upper atmosphere at many different locations all over the planet, by watching the Sun or any of a

number of stars as they rise and set," says Dr. Kurt Retherford, deputy-PI of the UVS and a principal scientist at SwRI.

SwRI has provided ultraviolet spectrographs for other spacecraft, including ESA's Rosetta comet orbiter, as well as NASA's [New Horizons](#) mission to Pluto, Lunar Reconnaissance Orbiter mission in orbit around the Moon, and Juno mission to Jupiter.

"JUICE-UVS is the fifth in this series, and it benefits greatly from the design experience gained by our team from the recently launched Juno-UVS instrument when it comes to operating in Jupiter's harsh radiation environment," says Gladstone.

The JUICE spacecraft is planned for launch in 2022. The three-year (minimum) science mission will begin shortly after the spacecraft's arrival at Jupiter in 2030.

Provided by Southwest Research Institute

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